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HEALTH AND SAFETY DATA FO	nn crv cor	MADY AMINA	NTUOAAHIINANS	
SELECTED FOR REPORTING B				
LETTER DATED 020188				
				Observation of the Control of the Co
Chemical Category				
ACID BLUE 40 (6424-85-7)				

P359755892

# CROMPTON & KNOWLES CORPORATION Dyes & Chemicals Division P.O.Box 341 Reading, Pa. 19603

February 1, 1988

The DocumenT Processing Center (TS-790) OTS (Room L-100) US EPA 401 M Street, SW Washington, D.C. 20460

Attn: TSCA 8(d)

Dear Sir:

The enclosed health and safety data is submitted by Crompton & Knowles Corporation, Dyes & Chemicals Division, in compliance with TSCA Section 8(d) for the six primary aminoanthraquinones recommended by the ITC and selected for reporting by EPA. The information submitted includes all of the health and safety data which is known to Crompton & Knowles.

If there are any questions relating to the information submitted, please contact me at 215-582-6651.

Sincerely,

Janice Warnquist

Manager-Regulatory Affairs

Environmental Affairs Department

Enclosures

86-980000132 \$ EPA-0TS

000534283P

Contains

ACID BLUE 40

C.I. 62125

CAS 6424-85-7

# MB Research Laboratories, Inc.

TEST FOR EYE IRRITATION IN RABBITS

-steinsburg and wentz roads

post office box 203

spinnerstown, pennsylvania 18068

215-536-4110

FOR: TOMS RIVER CHEMICAL CORPORATION

Test started

5/20/80

Project number: MB 80-4646 D

Test ended

6/03/80

Objective

To identify ocular irritation

potential

MATERIALS

Sample label :

#1207-00 Mix 1 TTS, Conc. 200%

Sample received :

5/05/80

Alizarine Blue 2GA

Description

Purple Powder

ANIMALS

Supplier(s) : Ace Animals, Nicholas Helf

Sex

: 6 Female

New Zealand White rabbits, approximately 8 weeks old when received, were equilibrated for at least one week in this laboratory. Twenty-four hours pretest, the cornea of each animal was examined with fluorescein and cobalt blue light. Six apparently healthy rabbits, free from evidence of ocular irritation or damage, were selected for the test.

The animals were identified by cage tags noting the test material, starting date, animal number and sex. In addition, each animal was identified by a uniquely numbered eartag.

The animals were housed 1/cage in suspended wire mesh cages. Any extraneous material which might produce eye irritation was excluded from the area. Fresh Purina rabbit chow and water were freely available. The animal room, reserved exclusively for rabbits on acute tests, was maintained at 20 - 21°C and was kept clean in accordance with the standards of AAALAC of which this laboratory is an approved member.

## METHODS

<u>Treatment</u> - The test material (0.1 ml or 0.1 g) was placed once into the conjunctival sac of one eye of each of six rabbits. The lids were held together briefly to insure adequate distribution of the test material. The untreated eye of each rabbit served as a control.

Observations - The general health of the rabbits was monitored during the observation period. The ocular reactions of the cornea, iris and conjunctiva were graded at 1 hour and at 1, 2, and 3 days after dosing. If any score was



TEST FOR EYE IRRITATION IN RABBITS

Page -2-

Project #: MB 80-4646 [

Sample #: 1207-00

noted on Day 3, the eyes were read again on Day 7. If any score was noted on Day 7, the eyes were read again on Day 14. Fluorescein and cobalt blue light were used in scoring ocular reactions on Days 1 and 3 and on Days 7 and 14, if necessary. Ocular reactions were graded as described by Draize, J.H. et al., J. Pharm. Exp. Ther. 82:377-390, 1944. The scores were interpreted by the method of Kay, J.H. Calandra, J.C. J. Soc. Cos. Chem., 13:281-289, 1962.

#### RESULTS

MEAN SCORES:	HOUR			DAYS				
	1	1	2	3	7	14		
	16.33	39.7	33.33	32.66	7.66	2.66		

#### CONCLUSION

The test article is moderately irritating.

#### SUMMARY OF DATA

Corneal opacity was present in 4/6 eyes. In one animal, it persisted to Day 14.

Iritis, noted in all eyes, was cleared by Day 7.

Mild to moderate conjunctival irritation, noted in all animals, was generally clear by Day 14.

## QUALITY ASSURANCE EVALUATION

The quality assurance unit reviewed various aspects of the study, raw data and final report on the following dates;

June 3, 1980 June 4, 1980 June 25, 1980

On S. Harwick 7-2-80 Wality Assurance

Respectfully submitted,

Oscar M. Moreno, Ph.D.

Susan S. Weatherby, Study Dir

Susan E. Weatherby, Study-Ulrector (Long Letter), Alterbach Archivist

Submitted: 7/01/80

The raw data is filed at MB Research by project number. The final report is filed by sponsor name and project number.

TEST FO	R EYE IRRITATION IN RABE	BITS			_		1B 80-4	
Pane -	3-	-		Sar	<b>e</b> fqm	#: ]	1207-00	)
An.No.	Item Tissue Readi	ing	Hour 1	1	2	Da 3	У 7	14
5877	A Cornea Opaci B Area 1. Cornea Total =	_	0 0 0	4 <sup>с</sup> 4 80	90 4	3 4 60	2 1 10	2 1 10
	C Iris 2. Iris Total = C	x 5	0	?	15	1 5	0	0
	D Conjunctiva Redner E Chemor F Discher 3. Conjunctiva To	sis	2 <sup>a</sup> 2 2 <sup>b</sup> 12	1 <sup>ad</sup> 2 <sub>b</sub> 3 <sup>b</sup> 12	1 2 2 <sup>b</sup> 10	1 2 2 10	2 1 2 8	1 1 1 6
	Totals added = 1 + 2 +	3	12	92	75	75	18	16
	UV Fluorescein scan			3		3	1	description of the second
5878	A Cornea Opaci B Area 1. Cornea Total =	-	0° 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
	C Iris 2. Iris Total = C	x 5	1 5	0	0	0	0	0
	D Conjunctiva Redne E Chemo F Disch 3. Conjunctiva To	sis	2 <sup>a</sup> 2 <sub>b</sub> 2 <sup>b</sup> 12	1 2 2 <sup>b</sup> 10	1 2 2 8	1 1 1 6	1 0 0 2	0 0 0 0
	Totals added = 1 + 2 +	- <b>3</b>	17	10	8	6	2	0
	UV fluorescein scan			2		2	0	0

		Tradicacin adm		£-		<b>.</b>	O	v
5887	A B	Cornea Opacity Area 1. Cornea Total = (AxB) x 5	0 0 0	0 0 0	2 1 10	2 1 10	- 0 0 0	0 0 0
	С	<pre>Iris 2. Iris Total = C x 5</pre>	0	1 5	1 5	1 5	0	0
	D E F	Conjunctiva Redness Chemosis Discharge 3. Conjunctiva Total = (D+E+F) x 2	2 <sup>a</sup> 3 <sub>b</sub> 16	2 2 2 12	2 2 2 12	2 2 2 12	1014	0 0 0 0
	То	tals added = 1 + 2 + 3	16	17	27	27	4	0
	UV	fluorescein scan		3	•	2	0	0

a = conjunctiva stained purple by material
b = area at eye stained purple by material
c = cornea stained purple by material
d = material in eye

? = unable to determine

TEST FOR		IRRITATION IN RASBITS			ject ple		8 80-46 207-00	
An.No. I	tem	Tissue Reading	Hour 1	1	2	Day 3	y 7	14
	A B	Cornea Opacity Area 1. Cornea Total = (AxB) x 5	0 0 0 <sup>c</sup>	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
	С	<pre>Iris 2. Iris Total = C x 5</pre>	1 5	1 5	0	0	0	0
	D E F	Conjunctiva Redness Chemosis Discharge 3. Conjunctiva Total = (D+E+F) x 2	2 <sup>a</sup> 3b 14	2 3 <sub>b</sub> 16	2 2 <sub>b</sub> 10	2 1 1 8	1 0 0 2	0 0 0 0
	•	als added = 1 + 2 + 3 Fluorescein scan	19	21 2	10	8	2	0
5881	A B	Cornea Opacity Area 1. Cornea Total = (AxB) x 5	0 0 0	3 <sup>c</sup> 2 30	1 20	4 1 20	2 1 10	0 0
	С	<pre>Iris 2. Iris Total = C x 5</pre>	1 5	1 5 .	1 5	1 5	0	0
	D E F	Conjunctiva Redness Chemosis Discharge 3. Conjunctiva Total = (D+E+F) x 2	2 <sup>a</sup> 2 2 <sup>b</sup> 12	2 <sup>ad</sup> 3 3 <sup>b</sup> 16	1 2 2 10	1 2 2 <sup>b</sup> 10	1 0 1 4	0 0 0 0
	Tot	tals added = 1 + 2 + 3	17	51	35	35	14	0
	UV	fluorescein scan		2	On (Quint)	2	<b>Q</b>	0
5893	A B	Cornea Opacity Area 1. Cornea Total = (AxB) x 5	0° 0 0	2 3 30	3 2 30	3 2 30	- 0 0 0	0 0 0
	C	Iris 2. Iris Total = C x 5	1	1 5	1 5	1 5	0	0
	D E F	Conjunctiva Redness Chemosis Discharge 3. Conjunctiva Total = (D+E+F) x 2	2 <sup>a</sup> 2 <sub>b</sub> 12	2 <sup>a</sup> 2 <sub>b</sub> 12	2 2 1 10	2 2 1 10	1 1 1 6	0 0 0 0
	Tc	tals added = 1 + 2 + 3	17	47	45	45	6	0
	UV	fluorescein scan		P <sub>c</sub>	•	3	O	0

a = conjunctiva stained purple by material

b = area at eye stained purple by material

c = cornea stained purple by material
d = material in eye

#### SCALE OF SCORES FOR GRADING THE SEVERITY OF OCULAR LESIONS®

OCULAR TISSUE	DESCRIPTION	eadine
CORNEA	A. OPACITY - Degree of Density - Area which is most dense is read Scattered or diffuse area, details of iris clearly visible Tasily descernible translucent areas, details of iris slightly obscured Opalescent areas, no details of iris visible, size of pupil barely discernible Opaque, iris invisible	. 7
	B. AREA OF CORNEA INVOLVED  One quarter or less but not zero  Greater than one quarter but less than one half  Greater than one half but less than three quarters  Greater than three quarters, up to whole area	7 2 3
	SCORE: A x B x 5 Total Maximum = 80	
IRIS	A. VALUES Folds above normal, congestion, swelling, circumcorneal injection (any or all or or a combination of any thereof), iris still reacting to light (sluggish re is positive) No reaction to light, hemorrhage, gross destruction (any or all of these)	these action 2
•	SCORE: A z 5 Total Maximum = 10	
EOHJUNCT! YA	A. REDNESS (refers to palpebral conjunctive only excluding cornee and iris) Yessels definitely injected above normal More diffuse, deeper crimson red, individual vessels not easily discernible Diffuse beefy red	2
	B. CHEMOSIS  Any swelling above normal (includes nictitating membrane)  Obvious swelling with partial eversion of the lids  Swelling with lids about half-closed  Swelling with lids about half-closed to completely closed	7
	C. DISCHARGE  Any amount different from normal (does not include small amount observed in inne- canthus of normal animals)  Discharge with spistening of the lids and hairs just adjacent to the lids  Discharge with spistening of the lids and hairs and considerable area around eye  SCORE: (A + B + C) x 2 Total Maximum = 20	3

\*Draize, John H. Dermal Toxicity, "Appraisal of the Safety of Chemicals in Foods, Drugs and Cosmetics", ASSOCIATION OF FOOD AND DRUG OFFICIALS OF THE U.S., 1959, pp 49-51

RATING OF	TEST	MATERIALS	BASED	CM	EAE	IRRITATION	PROPERTIES®

		•
RATING	range	DEFINITION
Mon-trritating	0 - 0.5	To maintain this rating all scores at the 24 hour reading must be zero; otherwise, increase rating I level.
Practically hom-irritating	Greater than 0.5 - 2.5	To maintain this rating, all scores at the 24 hour reading must be zero; otherwise, increase rating I level.
Minimally Irritating	Greater than 2.5 - 15.0	To maintain this rating, all scores at the 72 hour reading must be zero; otherwise, increase rating I level.
Mildly . Irritating	6reater than 15.0 - 25.0	To maintain this rating, all scores at the 7 day reading must be zero; otherwise, increase rating I level.
Moderately Irritating	Greater than 25.0 - 50.0	To maintain this rating, scores at 7 days must be less than or equal to 10 for 60% or more of the animals. Also, mean 7 day score must be less than or equal to 20. If 7 day mean score is less than or equal to 20 but less than 60% of the animals show scores less than 10, then no animal among those showing scores greater than 10 can exceed a score of 30 if rating is to be maintained; otherwise, increase rating 1 level.
Severely Irritating	Greater than 50.0 - 80.0	To maintain this rating, scores at 7 days must be less than or equal to 30 for 60% or more of the animals. Also, mean 7 day scores must be less than or equal to 40. If 7 day mean score is less than or equal to 40 but less than 60% of the animals show scores less than or equal to 30, then no animal among those showing scores greater than 30 can exceed a score of 60 if rating is to be maintained; otherwise, increase rating I level.
Extremely Traitating	Greater than 80.0 -110.0	

<sup>\*</sup>Ray, J.H., Calandra, J.C., J. Soc. Cos. Chem., 13:281 - 289, 1962.

#### SCALE OF SCORES FOR INTRAVIOLET FLUORESCEIN SCAN

Reading	Grade
Negative.	•
Positive with an area one quarter or less	
Positive with an area greater than one quar	ter but less than one half 2
Positive with an area greater than one half	but less than three quarters 3
Positive with an area greater than three qu	arters, up to whole area 4

ACID BLUE 40

C.I. 62125

CAS 6424-85-7

# Research Laboratories.

TEST FOR PRIMARY DERMAL IRRITATION IN RABBITS

steinsburg and wentz roads

post office box 203

TOMS RIVER CHEMICAL CORPORATION FOR:

spinnerstown, pennsylvania 18068

215-536-4110

MB 80-4646 C Project number:

Test started 5/20/80 ·Test ended

Objective |

To identify dermal irritation potential as defined in 16 CFR 1500.3

: 5/23/80

MATERIALS

#1207-00 Mix #1 TTS, Conc.200% Sample label

Sample received: 5/05/80

Alizarine Blue 2GA

Purple Powder - used as 50% m/v mixture in distilled water Description

ANIMALS

: Ace Animals, Perfection Breeders Supplier(s) : 6 Hales

New Zealand White rabbits, approximately 8 weeks old when received, were equilibrated for at least one week in this laboratory. Six apparently healthy rabbits were selected for the test.

The animals were identified by cage tags noting the test material, starting date, animal number and sex. In addition, each animal was identified by a uniquely numbered metal eartag.

The animals were housed 1/cage in suspended wire mesh cages. Fresh Purina rabbit cho and water were freely available. The animal room, reserved exclusively for rabbits of acute tests, was maintained at 20 - 21°C and was kept clean in accordance with the standards of AAALAC of which this laboratory is an approved member.

## METHODS

Site Preparation - The fur was clipped from the back and sides of the animals. The back to the left of the spinal column of all animals was abraded. The abrasions. extending the length of the exposure site, scratched the stratum corneum but did not reach the derma or produce bleeding. The back to the right of the spinal column remained intact.

Treatment - Six rabbits were dosed once dermally at one abraded and one intact site/ animal. 0.5 g (if the material was solid) or 0.5 ml (if the material was liquid) was applied to each site beneath 2.5 cm square gauze patches. The patches were secured with adhesive tape and the trunks were wrapped with impervious material. The test material was kept in contact with the skin for 24 hours, at which time the wrappings were removed.

Observations and Calculations - Dermal reactions were scored at 24 and 72 hours by the Draize scoring system (attached). The primary irritation index was calculated as cited in 16 CFR 1500.41.



TEST FOR PRIMARY DERMAL IRRITATION IN RABBITS

Project #: MB 20-4646

Page -2-

Sample #: 1207-00

## RESULTS

PRIMARY DERMAL INDEX: 0.17

## CONCLUSION

The test material is minimally irritating.

# SUMMARY OF DATA

Slight edema was noted in 3/6 animals at 24 hours.

#### QUALITY ASSURANCE EVALUATION

The quality assurance unit reviewed various aspects of the raw data and final report on the following dates;

May 27, 1980 June 25, 1980

Jon S. Harwick Obality Assurance

Respectfully submitted,

1/2-11/11/80

Respectfully submitted,

1/2-11/80

The raw data is filed at MB Research by project number. The final report is filed by sponsor name and project number.

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Primary Dermal	Index	=	Sum	of	Mean	Scores/4
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Sum of Mean Scores =

Evaluation of Skin Reactions Value Erythema & Eschar Formation: No ervthema 0 Very slight erythema (barely perceptible) 1 Well defined erythema 2 Moderate to severe erythema 3 Severe erythema (beet redness) to slight eschar formation (injuries in depth) Edema Formation: No edema n Very slight edema (barely perceptible) Slight edema (edges of area well defined by definite raising) 2 Moderate edema (raised approximately 1 millimeter) Severe edema (raised more than 1 millimeter and extending beyond the area of exposure)

Ω

0

Abraded skin - 24 hours

Abraded skin - 72 hours

The mean values (6 rabbits) for erythema/eschar and edema formation on intact and abraded skin at 24 and 72 hours (a total of 8 values) are added and divided by 4 to give the Primary Irritation score.

The conclusion was derived from the Primary Irritation Index as interpreted by the following table:

PRIMARY IRRITATION INDEX -	CONCLUSION
0 0.1 - 0.5 0.6 - 1.5 1.6 - 3.0 3.1 - 5.0 5.1 - 6.5 6.6 - 8.0	Non-Irritating Minimally Irritating Slightly Irritating Mildly Irritating Moderately Irritating Severely Irritating Extremely Irritating

ACID BLUE 40

C.I. 62125

CAS 6424-85-7

# Kesearch Laboratories.

TEST FOR ACUTE DERMAL TOXICITY IN RABBITS

TOMS RIVER CHEMICAL CORPORATION

FOR:

steinsburg and wentz roads

post office box 203

spinnerstown, pennsylvania 18068

215-536-4110

Project number: MB 80-4646 B Test started

To determine dermal toxicity

5/22/80 Test ended 6/06/80

MATERIALS

Sample label: #1207-00 Mix 1TTS, Conc. 200% Sample received: 5/05/80

Alizarine Blue 2GA

Description Purple Powder - used as 50% m/v mixture in distilled water

ANIMALS

Supplier(s) Perfection Breeders. Weight range 2.0 - 2.5 kgSex 2 Male - 2 Femal

New Zealand White rabbits, at least 8 weeks old when received, were equilibrated for at least one week in this laboratory. Two male and two female apparently healthy rabbits, were selected for the test.

The animals were identified by cage tags noting the test material, starting date, animal number and sex. In addition, each animal was identified with a uniquely numbered metal eartag.

The animals were housed 1/cage in suspended wire mesh cages (30" x 18" x 18"). Fresh Purina rabbit chow and water were freely available. The animal room, reserved exclusively for rabbits on acute tests, was maintained at 20 - 21°C and was kept clean in accordance with the standards of AAALAC of which this laboratory is an approved member.

#### METHODS

<u>Site Preparation</u> - 24 hours prior to dosing, the fur was clipped from the backs of the animals. The clipped area was 200 square cm, approximately 10% of the body surface. Just prior to dosing, abrasions were made in one half of the rabbits. The abrasions, extending the length of the exposure site, scratched the stratum corneum but did not reach the derma or produce bleeding.

Treatment - Two male and two female rabbits were dosed at 2.0 g/kg. For liquid materials the dose was based on the sample weight as calculated from the specific gravity. The test material was applied once dermally to the prepared site under gauze patches. The patches were secured with adhesive tape and the trunks were wrapped with impervious material. The test material was kept in contact with the skin for 24 hours, at which time the wrappings were removed. An estimate of the amount of material remaining was recorded. The exposure site was washed with warm tap water to remove excess material.

Observations - Dermal reactions were scored at 25 hours, 7 and 14 days by the



TEST FOR ACUTE DERMAL TOXICITY IN RABBITS

Page -2-

Project #: MB 80-0646 P

Sample #: 1207-00

Draize scoring system (attached). The rabbits were observed daily for 14 days for signs of toxicity, pharmacological effects and mortality. Body weights were recorded pretest and in the survivors at 7 and 14 days.

<u>Termination</u> - At 14 days, the survivors were sacrificed. All animals were examined for gross pathology.

#### RESULTS

LD 50: Greater than 2.0 g/kg of body weight

MORTALITY: 1/2 Male, Animal #5901 Day 2, 0/2 Female

INDIVIDUAL BODY WEIGHTS AND SKIN GRADES:

EARTAG	DOSE VOLUME CC	WE I <u>0</u>	GHTS <u>7</u>	- kg <u>14</u>	% REI1.	Re 25h	dness <u>7</u>	14	25h	Edema <u>Z</u>	14
5901 -M 5903 -M 5924 -F 5928 -F	8.0 10.0 8.4 9.2	2.0 2.5 2.1 2.3	2.6 2.1 2.5	3.0 2.1 2.5	90 90 90 90	0 1 1 0	1 1 1	0 0 1	0 0 0	0	0 0 0

ab = abraded

% Rem. = the amount of material remaining on the skin, gauze and occlusive binding at 24 hours, after the occlusive binding was removed.

#### ENTERATION OF SELE STACTIONS

EPTIMENA & ESCHAR FORMATION:

BO SETTIMENA
VERT SLIGHT SETTIMENA (SARELY PERCEPTIBLE)

BILL SETIMENE SETTIMENA
PECCEALIS TO SEVERE SETTIMENA
SETTIMENA (SECT SEMERS) TO SLIGHT ESCHAR
SOMMATION (SECTIMENS DE DEPTH)

- 4

#### Estra Fosnation:

Ro comma
Viev elsent edina (ballly penceptible)
Salent edina (edees of area held defined by
Definite datables)
Polerate edena (ealiste appositiately 1 millimeter)
Savere edena (ealiste pool tima 1 millimeter and
Savere edina (ealiste pool tima 2 millimeter and
Entending beford the area of exposure)

TEST FOR ACUTE DERMAL TOXICITY IN RABBITS Page -3-

MR 80-069.6 1207-00 Project #: Sample #:

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DAY	
HOUR	0
@ 2.0 g/kg	An.# & Sex

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AT ALL TIMES NOT MENTIONED, ANIMALS APPEARED NORMAL

/ = abdomen bloated
/ = emaciation
/ = few feces = diarrhea dead

5924 S	×		
590.3 S	×		
5901		front for	<b></b> 4
NECROPSY OBSERVATIONS:	Normal	Lung(s): congestion	Treated skin scaly

5928 S

0 = dead
5 = sacrificed
1 = scattered or slight

TEST FOR ACUTE DERMAL TOXICITY IN RABBITS Page -4Project #: MB 80-4646

Sample #: 1207-00

#### ONCLUSION

The test article is not toxic, as defined in 16 CFR 1500.3.

#### SUMMARY 0 F DATA

One male animal died from a dermal dose of Alizarine Blue 2GA at 2.0 g/kg on Day 2.

Diarrhea was the only predeath toxic sign. The surviving animals were generally normal Slight erythema was noted throughout the study. Edema was not present.

Body weights and necropsy findings of survivors were generally normal. Congested lungs and wasting of the body were noted in the spontaneous death.

#### QUALITY ASSURANCE EVALUATION

The quality assurance unit reviewed various aspects of the study, raw data and final report on the following dates;

> May 23, 1980 June 9, 1980 June 24, 1980

Mality Assurance

Respectfully submitted, pay M. Mirewo 1/2 Oscar M. Horeno, Ph.D. Danjel R. Cegven, Study Altenbach, Arc Submitted: 7/01/80

The raw data is filed at MB Research by project number. The final report is filed by sponsor name and project number. ACID BLUE 40

C.I. 62125

CAS 6424-85-7

# MB Research Laboratories, Inc.

TEST FOR SINGLE DOSE/ORAL LD 50 IN RATS

FOR: TOMS RIVER CHEMICAL CORPORATION

Project number: MB 80-4646 A

Objective

: MB 80-4040 A

: To determine oral toxicity

and/or oral LD 50

MATERIALS

Sample label : #1207-00 Mix #1TTS, Conc. 200%

Alizarine Blue 2GA

Description : Purple Powder - used as 30% m/v mixture in distilled water

ANIMALS

Supplier(s) : Ace Animals

Weight range

steinsburg and wentz roads

spinnerstown, pennsylvania 18068

post office box 178

215-536-4110 Test started

Test ended

Sample received:

: 186 - 230 g

5/19/80

5/05/80

: 6/02/80

Sex

5 Male - 5 Fem

Wistar rats, approximately 8 weeks old when received, were equilibrated for at least one week in this laboratory. Apparently healthy rats were selected for the test.

The animals were identified by cage tags noting the test material, starting date, animal number and sex. In addition, each rat was identified with an indelible body mark.

The animals were housed 5/cage in suspended wire mesh cages. Fresh Purina rat chow and water were freely available except for 16-20 hours prior to dosing when food was removed. The animal room, reserved exclusively for rodents on acute tests, was temperature controlled and was kept clean in accordance with the standards of AAALAC of which this laboratory is an approved member.

## METHODS

Treatment - The test material was given orally by syringe and a dosing needle.

One group of 5 male and 5 female rats was initially dosed at 5.0 g/kg. If two or more rats of the same sex die, or if three or more rats of either sex died at the initial dose level of 5.0 g/kg, a preliminary screen was run prior to selecting doses for the LD 50. Based on the results of the preliminary screen, doses were selected in an attempt to achieve an adequate dose response curve for calculation of an LD 50. If a 5.0 g/kg level was necessary for calculation of the LD 50, it was repeated. All dose levels were run simultaneously. For liquid materials, the dose was based on the sample weight as calculated from the specific gravity. The vehicle, if any, was chosen because of its lack of known toxicity, lack of physiologi effect and because it is relatively unreactive with other chemical substances.

Observations - The rats were observed 1, 2 and 4 hours after dosing and once daily for 14 days. Mortality, toxicity and pharmacological effects were recorded. Body weights were recorded pretest and in the survivors at 14 days.



TEST FOR SINGLE DOSE/ORAL LD 50 IN RATS

Page -2-

Project #: MB 80-4646 A

Sample #: 1207-00

<u>Termination</u> - At 14 days the survivors were sacrificed. All animals were examined for gross pathology.

The LD 50 was calculated, if possible, according to the method of Litchfield, J.T. Jr., & F. Wilcoxon, <u>JPET</u> 96:99, 1949 or Horn H.J. <u>Biometrics</u> 12:311, 1956.

#### RESULTS

LD 50: Greater than 5.0 g/kg of body weight

MORTALITY: 0/5 Male - 0/5 Female

BODY WEIGHTS AND DOSE VOLUME:

IGHIS AND DOSE	VOLORIE.	WEIGHT	<u>S - g</u>
An. #	Dose Volume	Day O	Day 14
<u>&amp; Sex</u>	cc	<u> </u>	<u>g</u>
1-M	3.8	230	375
2-11	3.4	205	314
3-N	3.5	208	304
4-M	3.6	216	347
5-M	3.5	207	331
6-F	3.2	194	251
7-F	3.1	186	252
8-F	3.2	195	252
9-F	3.2	193	253
10-F	3.1	188	272

<u>رم</u> Project #: MB 80-4646 Sample #: 1207-00 2 **~**⇒ 10 O ထ ဖ TOXICITY Ŋ 4 3 N DAY TEST FOR SINGLE DOSE/ORAL LD 50 IN RATS Page -3-4 HOUR N 0 5.0 g/kg AN.# \$ Sex **5** Z % 7 2 <u>Б</u> 9 Q 7.4

Ţ

AT ALL TIMES NOT MENTIONED, ALL ANIMALS APPEARED NORMAL

CODE: 1 = anogenital area stained yellow D = diarrhea

NECROPSY OBSERVATIONS: All animals, sacrificed on Day 14, were normal.

TEST FOR SINGLE DOSE/ORAL LD 50 IN RATS

Page -4-

Project #: MB 80-4646 A

Sample #: 1207-00

#### CONCLUSION

The test article is not toxic, as defined in 16 CFR 1500.3.

#### SUMMARY OF DATA

5/5 male and 5/5 female rats survived an oral dose of Alizarine Blue 2GA at 5.0 g/kg in generally good health.

Body weights and necropsy findings were normal.

#### QUALITY ASSURANCE EVALUATION

The quality assurance unit reviewed various aspects of the study, raw data and final report on the following dates;

May 29, 1980 June 3, 1980 June 24, 1980

Jon S. Harwick Duality Assurance

Respectfully submitted,

(Scar M. Moreno, Ph.D.

(Spried L. Erren, Study Direct

Elizabeth J. Altenbach, Archiv

Submitted: 7/01/80

The raw data is filed at MB Research by project number. The final report is filed by sponsor name and project number.

FIRE FIGHTERS SHOULD BE EQUIPPED WITH SELF CONTAINED BREATHING APPARATUS AND PROTECTIVE CLOTHING.

UNUSUAL HAZARDS:

DUST MAY BE EXPLOSIVE IF MIXED WITH AIR IN CRITICAL PROPORTIONS AND IN THE PRESENCE OF SOURCE OF IGNITION.

SECTION VI- HEALTH HAZARDS INFORMATION

EFFECTS OF OVEREXPOSURE:
NO ACUTE OR CHRONIC EFFECTS ARE KNOWN.
HOWEVER, ANY MATERIAL THAT GETS INTO THE EYES OR ON SKIN MAY
BE IRRITATING.

#### EMERGENCY FIRST AID PROCEDURES:

INHALATION: IF INHALED, MOVE TO FRESH AIR. IF DIFFICULTY IN BREATHING, ADMINISTER DXYGEN AND GET IMMEDIATE MEDICAL ATTENTION.

INGESTION: IF SWALLOWED, GIVE SEVERAL GLASSES OF MILK OR WATER AND INDUCE VOMITING. GET IMMEDIATE MEDICAL ATTENTION. NEVER GIVE FLUIDS OR INDUCE VOMITING IF PATIENT IS UNCONSCIBUS OR HAS CONVULSIONS.

EYE CONTACT: FLUSH EYES WITH FLOWING WATER FOR AT LEAST 15 MINUTES. IF IRRITATION DEVELOPES, CONSULT A PHYSICIAN.

SKIN CONTACT: WASH AFFECTED SKIN AREAS THOROUGHLY WITH SOAP AND WATER. IF IRRITION DEVELOPS, CONSULT A PHYSICIAN. REMOVE AND LAUNDER CONTAMINATED CLOTHING BEFORE REUSE.

#### SECTION VII- REACTIVITY DATA

STABILITY: STABLE

CONDITIONS TO AVOID: NONE KNOWN

POLYMERIZATION: WILL NOT OCCUR CONDITIONS TO AVOID: NONE KNOWN

INCOMPATIBLE MATERIALS: NONE KNOWN

HAZARDOUS DECOMPOSITION PRODUCTS:
BURNING WILL PRODUCE OXIDES OF CARBON AND NITROGEN.

SECTION VIII- PRECAUTIONS FOR SAFE HANDLING, USE AND DISPOSAL

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:
WHERE EXPOSURE IS NOT KNOWN, WEAR A NIOSH APPROVED DUST
RESPIRATOR AND SWEEP OR SHOVEL SPILLS, USING AN ABSORBANT

PREVENT DUSTING, INTO A WASTE DISPOSAL CONTAINER. WASH DOWN THE AREA WITH WATER.

WASTE DISPOSAL METHOD:

DISPOSAL MUST BE IN ACCORDANCE WITH APPLICABLE GOVERNMENTAL REGULATIONS.

SECTION IX- SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION: NIOSH APPROVED DUST RESPIRATOR.

VENTILATION: LOCAL EXHAUST TO MINIMIZE EXPOSURE.

PROTECTIVE GLOVES: WEAR RUBBER GLOVES.

EYE PROTECTION: WEAR GOGGLES.

OTHER PROTECTIVE MEASURES: WEAR APRON, COVERALLS, BOOTS AND LONG SLEEVE SHIRT TO PREVENT SKIN CONTACT.

NOTE: EYEWASH FOUNTAINS SHOULD BE EASILY ACCESIBLE. SHOWER AFTER HANDLING THIS PRODUCT. WORK CLOTHES SHOULD BE WASHED BEFORE REUSE. BEFORE EATING, DRINKING OR SMOKING, WASH HANDS AND FACE WITH SOAP AND WATER.

SECTION X- SPECIAL PRECAUTIONS

IN ACCORDANCE WITH GOOD INDUSTRIAL PRACTICES, HANDLE WITH CARE AND AVOID PERSONAL CONTACT.

SECTION XI - HAZARD RATING

HMIS RATING: HEALTH- 1

FIRE- 1

REACTIVITY- 0

PERSONAL PROTECTION- C

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DISPERSE BLUE 56

C.I. 63285

CAS 12217-79-7

# MATERIAL SAFETY DATA SHEETS

#### INTERNATIONAL DYESTUFFS CORPORATION

SECTION I- IDENTIFICATION OF PRODUCT

TRADE NAME: ELCOSPERSE BLUE JS

COLOR INDEX GENERIC NAME: DISPERSE BLUE 56

COLOR INDEX NUMBER: NONE

CAS NUMBER: 12217-79-7

CHEMICAL FAMILY: ANTHRAGUINONE

MANUFACTURER/DISTRIBUTOR:

INTERNATIONAL DYESTUFFS CORPORATION

50 PAGE ROAD P 0 BOX 2169

CLIFTON, N. J. 07015

RECEIVED

EMERGENCY PHONE NUMBER: 201 778-0122

1 AU .. 1987.

DATE PREPARED: NOVEMBER 15, 1985

PREPARED BY: Lawrence J. Rosen Vice President/Product Safety Director

SECTION II- WARNING

MAY CAUSE SKIN AND EYE IRRITATION

SECTION III- HAZARDOUS INGREDIENTS

NONE AS PER 29 CFR PART 1910. 1200

SECTION IV - PHYSICAL DATA

APPEARANCE: BLACK POWDER

ODOR: NONE

SOLUBILITY IN WATER: DISPERSIBLE

BULK DENSITY: 0.40 - 0.45

SECTION V- FIRE AND EXPLOSION HAZARD INFORMATION

FLASH POINT: NOT APPLICABLE

EXTINGUISHING MEDIA: FORM, CO2, DRY CHEMICAL OR WATER SPRAY

SPECIAL FIRE FIGHTING PROCEDURES:

ACID BLUE 45

C.I. 63010

CAS 2861-02-1

#### MATERIAL SAFETY DATA SHEETS

#### INTERNATIONAL DYESTUFFS CORPORATION

SECTION I- IDENTIFICATION OF PRODUCT

TRADE NAME: ALIZARINE BLUE BCN

COLOR INDEX GENERIC NAME: ACID BLUE 45

COLOR INDEX NUMBER: 63010

CAS NUMBER: 2861-02-1

CHEMICAL FAMILY: ANTHRAGUINONE

FORMULA: C14 H10 N2 D10 S2. 2Na

MANUFACTURER/DISTRIBUTOR: INTERNATIONAL DYESTUFFS CORPORATION

50 PAGE ROAD P 0 BOX 2169

CLIFTON, N. J. 07015

EMERGENCY PHONE NUMBER: 201 778-0122

DATE PREPARED: NOVEMBER 15, 1985

PREPARED BY: Lawrence J. Rosen

Vice Fresident/Froduct Safety Director

SECTION II- WARNING

MAY CAUSE EYE AND SKIN IRRITATION

SECTION III- HAZARDOUS INGREDIENTS

NONE AS PER 29CFR PART 1910. 1200

SECTION IV - PHYSICAL DATA

APPEARANCE: BLUE POWDER

ODOR: SLIGHT ODOR

SOLUBILITY IN WATER: 15 g/1 @ 90 C

MELTING POINT: > 200 C

PH : 10.8 @ 100 g/1 WATER

SECTION V- FIRE AND EXPLOSION HAZARD INFORMATION

FLASH POINT: NOT APPLICABLE

EXTINGUISHING MEDIA: FOAM, CO2, DRY CHEMICAL OR WATER SPRAY

SPECIAL FIRE FIGHTING PROCEDURES:

FIRE FIGHTERS SHOULD BE EQUIPPED WITH SELF CONTAINED BREATHING APPARATUS AND PROTECTIVE CLOTHING.

UNUSUAL HAZARDS:

DUST MAY BE EXPLOSIVE IF MIXED WITH AIR IN CRITICAL PROPORTIONS AND IN THE PRESENCE OF SOURCE OF IGNITION.

SECTION VI- HEALTH HAZARDS INFORMATION

TOXICOLOGICAL DATA: RAT, ORAL LD50: >5000 mg/kg

RABBIT, SKIN: NOT KNOWN RABBIT, EYES: NOT KNOWN

EFFECTS OF OVEREXPOSURE:

NO INFORMATION FOUND IN STANDARD REFERENCES OR DATABASES

EMERGENCY FIRST AID PROCEDURES:

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STABILITY: STABLE

CONDITIONS TO AVOID: NONE KNOWN

POLYMERIZATION: WILL NOT OCCUR CONDITIONS TO AVOID: NONE KNOWN

INCOMPATIBLE MATERIALS: NONE KNOWN

HAZARDOUS DECOMPOSITION PRODUCTS:

BURNING WILL PRODUCE OXIDES OF CARBON AND NITROGEN. OXIDES OF SULFUR MAY ALSO BE PRODUCED.

SECTION VIII- PRECAUTIONS FOR SAFE HANDLING, USE AND DISPOSAL

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: WHERE EXPOSURE IS NOT KNOWN, WEAR A NIOSH APPROVED DUST

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SECTION X- SPECIAL PRECAUTIONS

IN ACCORDANCE WITH GOOD INDUSTRIAL PRACTICES, HANDLE WITH CARE AND AVOID PERSONAL CONTACT.

SECTION XI - HAZARD RATING

HMIS RATING: HEALTH- 1

FIRE- 1

REACTIVITY- 0

PERSONAL PROTECTION- SD

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ACID BLUE 45

C.I. 63010

CAS 2861-02-1

THE UNIVERSITY OF NORTH CAROLINA

Department of Environmental
Sciences and Engineering
School of Public Health

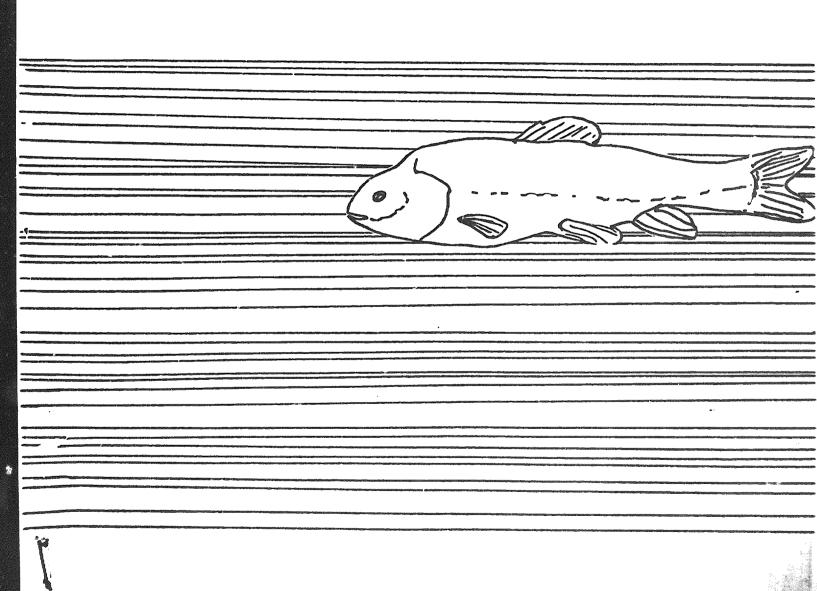
CHAPEL HILL, N. C. 27514

UNC WASTEWATER

RESEARCH CENTER

ACUTE TOXICITY OF 46 SELECTED DYES
TO THE FATHEAD MINNOW,

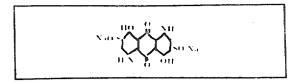
Pimephales promelas



TO SEE STATE

RESEARCH CENTER

#### AMERICAN DYE MANUFACTURERS INSTITUTE PROJECT



Dye formula

- 1. Test dye Acid Blue 45 C. I. No. 63010 Date tested 3/6-3/10/72

  Supplier American Dye manufacturers Instrum supplied Dry powder

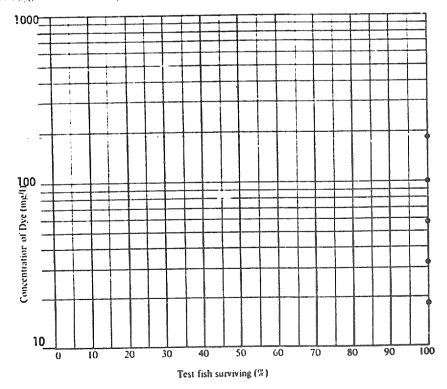
  Conditions of storage Stored in dark at approximately 20 C.
- 2. Test fish Fathead minnow (Pimephales promelas)

  Supplier Windmill Fish Hatcheries ... Number per par 10

Avg. wt. 0.67 g. range, 0.28 to 2.94 g. Avg. length 4.33 cm: range, 3.50 to 7.00 cm.

5. Procedure: Static

7. 96-hour TL50  $\sim$  >180  $\sim$  mg L (Aerated 5 min each at 48 hr)



DISPERSE BLUE 56

C.I. 63285

CAS 12217-79-7

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CAS 27312-17-0

PAGE 12

# MATERIAL SAFETY DATA SHEET RECEIVED

Required under OSHA's Hazard Communication Standard 29 CFR 1915-1200

DEC 3 1985

DENTITY (As Vent es Label	em iin) Sumikaron Blu	A 2 202					
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Higashi-ku, O	saka 541, Japan	Signature of Pr	Nove	mber BN)	<u> 1985</u>		
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L-ESLF 1-8884 13/

# Sumikaron Blue E-FBL

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	Eve-	izr	itant (rabbit) more than 5.000 mg/kg
rett og erleityr		NTP	None Mar Memographi None OSHA Regulated? None
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DISPERSE BLUE 56

C.I. 63285

CAS 12217-79-7

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CAS 27312-17-0

- Material Safety Data Sheet

Yay be used to comply with

OSHA's Hazard Communication Standard,
29 CFR 1910.1200. Standard must be
consulted for specific requirements.

U.S. Department of Labor
Occupational Safety and Health Administration
(Non-Mandatory Form)
Form Approved

OMB No. 1218-0072



IDENTITY (As Used on Label and Usi) Blank speces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that. DISPERSE BLUE 56 Section ( Manufacturer's Name Emergency Telephone Number CHINA NATIONAL CHEMICALS IMPORT & EXPORT CORP. Address (Number, Street, City, State, and ZIP Code) Telephone Number for Information ER LI GOU, XI VIAO Date Prepared BEIJING, PEOPLES REPUBLIC OF CHINA November 1986 Signature of Preparer (optional) Section II — Hazardous Ingredients/Identity Information Other Limits Hazardous Components (Specific Chemical Identity; Common Name(s)) **OSHA PEL** ACGIH TLV Recommended % (optional) Not applicable No No None Section III — Physical/Chemical Characteristics **Boiling Point** Specific Gravity (H2O = 1) N/A 0.5 Vapor Pressure (mm Hg.) Melting Point N/A >150°C Vapor Density (AIR = 1) **Evaporation Rate** N/A (Butyl Acetate = 1) N/A Solubility in Water Dispersible Appearance and Odor Blue powder, no odor Section IV — Fire and Explosion Hazard Data Flash Point (Method Used) Flammable Limits LEL UEL N/A N/A Extinguishing Media Water, Dry chemical, CO2, Foam Special Fire Fighting Procedures For fighting fires, wear SCBA Unusual Fire and Explosion Hazards None expected

	- Heactivity Data					
Stability	Unstable	Conditions to Avoid				
,	Stable	None				
ncompatibility	(Materials to Avoid)	X				
	None	known				
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nazardous Polymerization	May Occur	Conditions to Avoid	oxides of Car	DON & Ni	trogen	
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		X				
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ecautions to Be	Taken in Handling an	d Storing				
n accord	lance with g	d Storing OOD industrial p	practice, hand	dle with	care and av	oid cont
her Precautions						The second secon
ection VIII -	- Control Measur					
spiratory Protec	tion (Specific Terral					
	IV.	IOSH approved du	st respirator	* 0		
ntilation	Local Exhaust	X	Special			
	Mechanical (General)					<u>.</u>
olective Gloves			Other			
Ru	bber gloves		Eye Protection			
ner Protective C	lothing or Engineers		L Gogg	162		
prk/Hygienic Pra	<u>verall to m</u>	<u>inimize skin con</u>	tact.			4.0
WT2 CODE	: H=1, F=1,	R=1, PP=SD	Page 2			
						491-579/45775

DISPERSE BLUE 56

C.I. 63285

CAS 12217-79-7

0R

CAS 27312-17-0



#### MAIERIAL SAFEIY DAIA SHEE!

MANUFACTURING DIV ADDRESS

MOBAY CHEMICAL CORPORATION-Dyes and Pigments Division PO Box 385 Union Metropolitan Park Union, New Jersey 07083

DATA SHEET N	10	
DIVISION		
ISSUE DATE	March	1984
ISSUED BY		
SUPERSEDES ISSUE OF		

Union,	New Jers	ey 07083			SUPE	RSEDES OF
				<del>-11 - 10210</del>		
CHEMTREC CHEMICAL TRANSPORTATION TELEPHONE NO: 800-424-9300; DISTR		· 202-482-7616	(803) 553-3		CY NO.:	
PRODUCT NAME		. 562 760 1010	(003) 333-1		ODE NUMBER	
RESOLIN BLUE LBF				4	CC9	901
CHEMICAL FAMILY			CHEMICAL NAME & SYNONYMS			
Anthraquinone			CI Disperse	_		
CHEMICAL FORMULA	·		TRADE NAME & SYNONYA			
Proprietary			Same as prod	_	2	
0.000	· · · · · · · · · · · · · · · · · · ·	HAZARDOUS	INGREDIENTS	· · · · · · · · · · · · · · · · · · ·		
HAZARDOUS MIXTURES OF OTHER LIG	UIDS, SOLIDS OR				%	CURRENT TLV
None as per 29 CFR	section 1	1910.1000 subpa	art Z			
The state of the s		PHYSIC	AL DATA			
APPEARANCE (SOLID, LIQUID, GAS)	MOLECULAR		MELT POINT		SPECIFIC GF	ANITY
Powder	NA		NA		NA	MAIIT
VAPOR DENSITY (AIR=1)	COLOR		BULK DENSITY			.h.T
NA	Blue		NE		BOILING POINT	
VAPOR PRESSURE	SOLUBILITY (	WATER)	ODCR		% VOLATILE BY VOLUME	
NA	Disper	•	None		NA	
		· · · · · · · · · · · · · · · · · · ·	LOSION DATA			
FLASH POINT °F (METHOD USED)		FLAMMABLE LIMIT		Tevrus un		
NA					ING MEDIA	1
SPECIAL FIRE FIGHTING PROCEDURES,	UNUSUAL EIRE OR		CI NA	Water, dry chemical, CO		nemical, co <sub>2</sub> , 1
Firefighters should			contained breat	hing app	aratus	to protect
against potentially		•				
			· · · · · · · · · · · · · · · · · · ·	· ·		
Avoid dusting. Dus	t can for	m explosive mi	xtures with air		-	
		-				•
		TOXICIT	TY DATA			
LDSO, ORAL (INGESTION)		LD50, DERMAL (SKIN CONT.	ACT)	INHALATION	(LC50)	
> 5000 mg/kg		NE		NE	•	
FISH, LC50 (LETHAL CONCENTRATION)		TLV (UNITS) (THRESHOLD	LIMIT VALUE)	SKIN IRRITA	TION	
> 500 mg/1 - 48 hr NE		NE	1		gh: irritant	
EFFECTS TO EYE		EFFECTS TO LUNG		OTHER		
Non-irritant		NE				
EMERGENCY AND FIRST AID PROCEDUR						очинования «Маниугонды размення «Маниугонда » «Манической спадата» «Манической спадата» «Манической спадата» «
For eyes: Flush th	oroughly	with water. G	et prompt medic	al atten	tion.	
For skin: Flush wi	th water.					
Transfer or very like the first of the first		2-20-20-20	Company of the Compan		ED CONTROL CONTROL OF THE CONTROL OF	
	designation of the second	and we consider the second of the second	and a stage of the second control of the sec	***************************************		

RESOLIN BLUE LBF

## REACTIVITY DATA

CONDITIONS TO AVOID
NA
CONDITIONS TO AVOID
NA NA
COLOVA OI
educing agents may destroy color.
RODUCTS
ease CO, CO <sub>2</sub> , HBr, and oxides of nitrogen and sulfur.

## SPILL OR LEAK PROCEDURE

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED	
Spills should be swept up and placed in containers. Spill area can	
be washed with water; collect wash water for approved disposal.	
WARTE DISCOULT METHOD	
WASTE DISPOSAL METHOD Waste disposal should be in accordance with existing federal, state and	
local environmental control regulations.	

## SPECIAL PROTECTION DATA

RESPIRATOR TYPE	
Use a NIOSH approved dust respirator	
EYE PROTECTION	GLOVES
Safety goggles	Rubber with gauntlets
OTHER PROTECTIVE EQUIPMENT	
Use local exhaust if dust is a problem	
Emergency showers and eye wash stations sh	ould be available

## **SPECIAL PRECAUTIONS & STORAGE DATA**

STORAGE TEMPERATURE	(OPTIMUM)	AVERAGE SHELF LIFE
Min. NA	Max. NA	NE
SPECIAL SENSITIVITY (HE	AT, LIGHT, MOISTURE)	
None		
PRECAUTIONS TO BE TAK	EN IN HANDLING AND STORING	
Store in dry	place, away from exces	sive heat, in original or similar waterproof
containers.	Reseal containers imme	ediately after use. Avoid unnecessary contact.

## SHIPPING DATA

D.O.T. SHIPPING NAME		TECHNICAL SHIPPING NAME
Non-regulated		RESOLIN BLUE LBF
D.O.T. HAZARD CLASSIFICATION	UN/NA NO.	R.Q.
Non-regulated		
D.O.T. LABELS REQUIRED	LABEL	T.S.C.A. STATUS
None		Complies
REASON FOR ISSUE:	FRT. CLASS BULK:	
New Product	FRT. CLASS PKG:	
INITIATED BY: TITLE		APPROVED BY: TITLE:
R. Eagle, Product Safety	Coordinator	H. Vyas, Manager, Ecology Department
DATE INITIATED:	2	DATE APPROVED:
March 1984 , 1 6	zle	March 1984. /tu.
	en men en e	N.E NOT ESTABLISHED N.A. NOT APPLICABLE AL - ACTIVE INSPEDIENT

This information is furnished without warranty, expressed or implied, except that it is accurate to the best knowledge of Mobay Chemical Corporation. The data on this sheet relates only to the specific material-designated nerein. Mobay Chemical Corporation assumes no legal responsibility for use or relance upon these data.

DISPERSE BLUE 56

C.I. 63285

CAS 12217-79-7

OR

CAS 27312-17-0

DIVISION ADDRESS

MOBAY CHEMICAL CORPORATION Dves and Pigments Division Mobay Road Pittsburgh, PA 15205

Feb. 11. 1986 December 1984

ISSUE DATE SUPERSEDES

TRANSPORTATION EMERGENCY: CALL CHEMTREC TELEPHONE NO: 800-424-9300, DISTRICT OF COLUMBIA: 202-483-7616 MOBAY NON-TRANSPORTATION EMERGENCY NO.: (412) 923-1800

## PRODUCT IDENTIFICATION

RECEIVED

JUN 24 1986

Resolin Blue FBL PRODUCT NAME....:

PRODUCT CODE NUMBER..: 45506,12

CHEMICAL FAMILY....: Anthraquinone

CI Disperse Blue 56 CI NAME....:

CAS NUMBER....: Proprietary T.S.C.A. STATUS....: In compliance

### HAZARDOUS INGREDIENTS

### III. PHYSICAL DATA

APPEARANCE....: Powder COLOR....: Blue

Mild aromatic SOLUBILITY IN WATER..: Dispersible 9.5 = 10.5pH.....

### IV. FIRE & EXPLOSION DATA

FLASH POINT....: Not applicable

Water, dry chemical, CO,, foam EXTINGUISHING MEDIA..:

SPECIAL FIRE FIGHTING PROCEDURES/UNUSUAL FIRE OR EXPLOSION HAZARDS:

Firefighters should be equipped with with self-contained breathing apparatus to protect against potentially toxic and irritating fumes.

Avoid dusting. Dust can form explosive mixtures with air.

#### HEALTH EFFECTS DATA

ANIMAL TOXICITY -

ORAL, LD50

(INGESTION)....: Greater than 5,000 mg/kg - rats

Greater than 10 mg/l - 48 h - Leuciscus idus (L)FISH, LC50....:

EYE EFFECTS....: slight irritant - rabbits 🦯

SKIN EFFECTS....: slight irritant - rabbits

**HUMAN EFFECTS** 

OF OVEREXPOSURE...: Because the complete acute and chronic hazards of

this product have not been determined, employees should avoid exposure to it. Avoid contact with skin, eyes and clothing. Similar products have been shown to cause a temporary skin reaction (allergic

contact dermatitis) in some people.

Product Code: 45506,12 Page 1 of 3

## EMERGENCY & FIRST AID PROCEDURES

SKIN CONTACT....:

Wash eyes immediately with large amounts of water, EYE CONTACT....:

occasionally lifting the upper and lower lids,

until no evidence of product remains (approximately 10-20 minutes). Get medical attention. Do not wear

contact lenses while handling this product.

Immediately wash skin with soap and plenty of water. If a temporary skin reaction (rash) occurs

it should be treated as allergic contact

dermatitis. Launder contaminated clothing before

If this product has been swallowed, do not induce INGESTION....:

vomiting. Qualified medical personnel should

remove the product by gastric levage and catharsis.

#### EMPLOYEE PROTECTION RECOMMENDATIONS VII.

Employees should wear protective goggles. EYE PROTECTION ....:

This material may be absorbed via the dermal route SKIN PROTECTION...:

if prolonged or widespread skin contact occurs. Employees should avoid skin contact by wearing protective clothing. Long sleeve shirts, pants, rubber gloves, and rubber boots are recommended. Additional protection such as impervious suits are recommended when the potential for dermal contact is significant. Employees should wash their hands and

face before eating and drinking, and shower

thoroughly before leaving work.

RESPIRATORY

Employees should avoid inhalation of dusts. PROTECTION....:

Wherever potential for dusting exists an appropriate NIOSH approved respirator with dust

filter should be worn.

Use local ventilation if dusting is a problem. VENTILATION....:

Emergency showers and eye wash stations should be OTHER....:

available.

## VIII. REACTIVITY DATA

Stable STABILITY....:

Not applicable POLYMERIZATION....:

INCOMPATIBILITY (MATERIALS

Oxidizing and reducing agents. TO AVOID)....:

HAZARDOUS DECOMPOSITION

CO, CO, oxides of nitrogen and sulfur, HBr, PRODUCTS....:

and potentially toxic fumes.

#### IX. SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Spills should be swept up and placed in containers. Spill area can be washed with water; collect wash water for approved disposal. WASTE DISPOSAL METHOD: Waste disposal should be in accordance with existing federal, state, and local environmental regulations.

## X. SPECIAL PRECAUTIONS & STORAGE DATA

PRECAUTIONS TO BE TAKEN
IN HANDLING AND STORING: Store in dry place, away from excessive heat, in original or similar waterproof containers. Reseal containers immediately after use. Avoid unnecessary contact.

### XI. SHIPPING DATA

TECHNICAL SHIPPING NAME: Anthraquinone Dyestuff

D.O.T. HAZARD

CLASSIFICATION.....: Non-regulated

D.O.T. LABELS REQUIRED .: None

FRT. CLASS BULK....:

FRT. CLASS PKG....:

PRODUCT LABEL..... 02A

### XII. APPROVALS

REASON FOR ISSUE..... Revision

DATE APPROVED..... November 1985

APPROVED BY..... J. Mostowy

TITLE..... Senior Regulatory Compliance Specialist

DISPERSE RED 60

C.I. 60756

CAS 17418-58-5



# Cannon Laboratories, Inc.

P. O. Box 3627, Reading, Pa. 19605 (215) 375-4536

ACUTE INHALATION TOXICITY STUDY OF
DISPERSE PINK N GRANULES 100%

CODE NO. 4080-40

BATCH NO. 69, TR#77-1037

ISSUED BY: CANNON LABORATORIES, INC.

SUBMITTED TO:

TOMS RIVER CHEMICAL CORPORATION BOX 71
TOMS RIVER, NEW JERSEY 08753

DATE: FEBRUARY 20, 1978

LABORATORY NUMBER: 7E-9483

KAT



# Cannon Laboratories, Inc.

## AUTHORIZATION:

This investigation was authorized by the Toms River Chemical Corporation, Box 71, Toms River, New Jersey 08753 in a letter dated December 16, 1977 from Walter R. Payne, Director of Safety.

For this test procedure "Disperse Pink N Granules 100%, Code No. 4080-40, Batch No. 69, TR#77-1037", a dark red powder, was used.

UNIVERSITY OF MIAMI
CORAL GABLE FLORIDA 33124

UM Nos. 77, 78, 79, 80, 81, 83 Report No. 46

> Location: SOUTH CAMPUS BUILDING 6

Mailing Address
RESEARCH AND TEACHING CENTER
OF TOXICOLOGY
SCHOOL OF MEDICINE
P. O. BOX 243216

Skin Irritation Tests in Rabbits

-10 skin applications over a period of 12 - 14 daysof the following compounds:

Disperse Red RB Paste, Mix 16 Stand., 4079-20

-- TRC 76-848; UM 78

Six albino rabbits were used for each material. The hair was clipped from the back of each animal. A total of 10 doses of each material were applied to each of three rabbits with intact skin and to each of three rabbits with abraded skin. The treated areas measured 12 x 18 cm per rabbit, and the volume of the material applied was approximately 2.0 ml per rabbit (equal to 0.8 gram of a 40% solution/suspension). This was spread and rubbed evenly onto the skin and into the abrasions once a day on five days of the week, over a period of 12 to 14 days. The areas exposed covered approximately 10% of the total body surface of a rabbit weighing between 2.0 and 2.5 kg.

UM No. 78 (Disperse Red RB Paste) - This material is a liquid and was administered as received.

I.D. No.		Body 1	leight eight	GAIN in
of Rabbit	<u>Skin</u>	At Start &	After 12 Days kg	Body Weight kg
1 2 3	Intact	2.84 3.56 2.82	3.30 3.86 3.32	0.46 0.30 0.50
4 5 6	Abraded "	2.64 2.66 3.14	3.41 3.24 3.59	0.77 0.58 0.45

Effects Noted: The compound did not produce signs of skin irritation. The abraded areas had nearly healed completely at the completion of the experiment. Gain in body weight was normal. The color of the material is brown; it stained the skin pink and the fur brown. The urine was brown in color. Conclusion: The material identified as UM 78 is not a skin irritant.

DISPERSE RED 60

C.I. 60756

CAS 17418-58-5

# MB Research Laboratories, Inc.

ACUTE DERMAL TOXICITY IN RABBITS

For: Toms River Chemical Corporation

Project number MB 77- 2432

Sample: Disperse Pink N Granules

Mix # 69

Concentration: 100%

TR # 77-1012 ·

Code No: 4080-40

steinsburg and wentz roads
post office box 203
spinnerstown, pennsylvania 18068
215-536-4110

Material received: 12/21/77
Test started: 1/18/78
Test ended: 2/01/78
Description: Red Powder-use as 50% solution in distilled

New Zealand White rabbits approximately 8 to 11 weeks of age were received in good health from our local supplier and remained in good health during the equilibration period in this laboratory. The rabbits were equilibrated for at least 7 days. The rabbits were housed in elevated wire mesh cages in temperature controlled rooms reserved exclusively for rabbits on acute tests. Purina Rabbit Chow and water from bottles were available ad libitum.

Twenty four hours prior to dosing the backs of the rabbits were clipped free of fur with an Oster ANG-RA clipper head designed specifically for clipping rabbits. The rabbits were returned to their cages overnight. Just prior to dosing one half of the rabbits were abraded with a 21 gauge bent tip needle. The abrasions, made every 2 to 3 cm longitudinally, scratched the stratum corneum

but did not disturb the derma or produce bleeding.

The test material was applied to the backs of two male and two female rabbits at a dose of 2.0 g/kg. The test site was covered with gauze and the trunk was wrapped with impervious material for 24 hours. Following removal of the binder at 24 hours the test site was washed with warm tap water. One hour after washing the test sites were graded for skin irritation according to the attached scale. Skin sites were read again at 7 and 14 days. Body weights were recorded pretest and at 7 and 14 days. The rabbits were observed daily for 14 days for signs of toxicity or mortality. Necropsies were performed on all rabbits.

RESULTS: The acute dermal LD 50 is greater than 2.0 g/kg.

Mortality: 0/4

Toxicity: Chromorhinorrhea, Yellow Exudate around nose/mouth, and bloated abdomen noted in Animal #3 - days 2, 3, 4,13

and 14.

At all other times not mentioned, all animals appeared normal.

Respectfully submitted,

M

Oscar M. Moreno, Ph.D.
President
3/20/78

Indiv Rabbii number	t Sex	y Weights Weights - O 7		Grades Redness 25h 7	14	Edem 25h		14
2 3 4	M A	2.2 2.2 2.2 2.2 2.3 2.4 2.0 2.2 ne redn	1.9 2.5 2.3	* 0 * 0 * 0 * 0 to colo	0 0 0 0 r of material	0000	0	0000

**Necropsy Observations:** 

Number with Sign

Norma.			5
Liver	Dark	(purple)	ş
 * 15 34 4 5 5 5	e like produce in the		

Evaluation of Skin Reactions Value Erythema & Eschar Formation: No erythema 0 Very slight erythema (barely perceptible) Well defined erythema Moderate to severe erythema Severe erythema (beet redness) to slight eschar formation (injuries in depth) Edema Formation: No edema Very slight edema (barely perceptible) and the same Slight edema (edges of area well defined by definite raising) Moderate edema (raised approximately 1 millimeter) Severe edema (raised more than 1 millimeter and extending beyond the area of exposure)

# Research Laboratories, Inc.

REPORT ON RABBIT EYE IRRITATION

For: Toms River Chemical Corporation

Project number MB 77- 2432 Sample Disperse Pink N Granules Mix #

69 Concentration: 100% 77-1012

CODE NO: 4080-40

steinsburg and wentz roads port office box 203 spinnerstown, pennsylvania 18068 215-530-4110

> Material received: 12/21/77 Test started: 1/17/78 Test ended: 1/20/78

Description: Red Powder

This study was designed to determine ocular irritation potential of

a material when instilled in the rabbit eye.

Six New Zealand White rabbits weighing approximately 2.5 kg were housed individually in suspended wire mesh cages in temperature and light controlled rooms. Purina rabbit chow and water were available ad libitum.

The rabbits were equilibrated in this laboratory for at least seven days. Rabbits with irritated or damaged eyes were not used in

The test material (0.1 ml liquid or 0.1 ml-equivalent solid) was instilled in the lower conjunctival sac of one eye of each rabbit and the lids held closed for approximately one second to insure even distribution of the test material over all surfaces of the eye. The other

eye served as an untreated control.

The eyes were examined and graded for irritation and corneal damage at 1, 24, 48 and 72 hours after instillation with a hand slit lamp. Eyes not returning to a score of zero by 72 hours were graded on the seventh day after instillation. Eyes still not returning to a score of zero were graded on the fourteenth day after instillation. All eyes were examined by applying 1 drop of 1% fluorescein sodium ophthalmic solution, U.S.P., to the cornea pre-test, 24, 72 hours and 7 and 14 days after instillation.

The ocular reactions were graded and interpreted as described in "Appraisal of the Safety of Food, Drugs, and Cosmetics", Association of Food and Drug Officials of the United States, 1959 with the assistance of the "Illustrated Guide for Grading Eye Irritation by Hazardous Substances". A copy of the score and interpreting system is attached.

The individual scores are presented on the attached pages.

The mean scores are:

Hour 1 8.50 Day 1 0.33 Day 2 0 Day 3 0 Day 7 Day 14

CLASSIFICATION:

Minimally Irritating.

Respectfully submitted,

Oscar M. Moreno, Ph.D.

President

3/21/78



Rabbit Indivi	Eye Irritation Study dual Daily Scores	Mater	ial:	Disp	erse :	Pink N Granules
An. No.	Item Tissue Reading	Ho:	ır 1	2	Da 3	iy 7 14
1	A Cornea Opacity B Area	0	0	0	0	
	Area 1. Cornea Total = (AxB) x 5					
1224 1224	C Iris 2. Iris Total = C x 5	1 5	0	0	0	
5. July 1. 15	D Conjunctiva Redness	1	1	0	0	
	E Chemosis F Discharge	1	0	Ö	0	
	3. Conjunctiva Total = (D+E+F) x 2	8	2	ŏ	0	
\$ <sub>1</sub>	Totals added = 1 + 2 + 3	13	2	0	0	
	UV Fluorescein scan		0		0	
2	A Cornea Opacity B Area 1. Cornea Total = (AxB) x 5	0	0	0	0	
entra Lisura es	C Iris 2. Iris Total = C x 5	0	0	0	0	
	D Conjunctiva Redness E Chemosis F Discharge	1	0	0	0	
	3. Conjunctiva Total = (D+E+F) x 2	4	ŏ	ŏ	ŏ	
1000	Totals added = 1 + 2 + 3	4	0	0	0	
•	UV fluorescein scan		0		0	•
	A Cornea Opacity B Area 1. Cornea Total = (AxB) x 5	0	0	0	0	
	C Iris 2. Iris Total = C x 5	0	0	0	0	
	Conjunctiva Redness Chemosis Discharge 3. Conjunctiva Total = (D+E+F) x 2	0	0	0	0	
	otals added = 1 + 2 + 3	0	0	400		
	JV fluorescein scan	V	0	<b>O</b>	0	

Project Nc: MB 77-2432

Rabbit Eye Irritation Study Individual Daily Scores

Material: Disperse Pink N Granules

An.No.	Item Tissue Reading	Hou		2	Day 3	y 7 14
4	A Cornea Opacity B Area 1. Cornea Total = (AxB) x 5	0	0	0	0	, ,,
	C Iris 2. Iris Total = C x 5	1 5	0	0	0	
	D Conjunctiva Redness E Chemosis F Discharge 3. Conjunctiva Total = (D+E+F) x 2	1 2 0 6	0000	0000	0000	
	Totals added = 1 + 2 + 3		0	0	0	
	UV Fluorescein scan		0		0	
5	A Cornea Opacity B Area 1. Cornea Total = (AxB) x 5	0	0	0	0	
	C Iris 2. Iris Total = C x 5	0	0	0	0	
	D Conjunctiva Redness E Chemosis F Discharge 3. Conjunctiva Total = (D+E+F) x 2	1 2 1 8	0	0000	0 0 0	-
	Totals added = 1 + 2 + 3	8	0	0	0	
	UV fluorescein scan	_	0		0	
6	A Cornea Opacity B Area 1. Cornea Total = (AxB) x 5	0	0	0	0	
	C Iris 2. Iris Total = C x 5	1 5	0	0	0	
	D Conjunctiva Redness E Chemosis F Discharge 3. Conjunctiva Total = (D+E+F) x 2	10 5 5	0	0 0	0	
	Totals added = 1 + 2 + 3	15	0	0	0	
	UV fluorescein scan	-	0		0	34

#### SCALE OF SCORES FOR GRADING THE SEVERITY OF OCULAR LESIONS.

OCULAR TISSUE	DESCRIPTION	<b>Grading</b>
CORNEA	A. OPACITY - Degree of Density - Area which is most dense is read Scattered or diffuse area, details of iris clearly visible Easily descernible translucent areas, details of iris slightly obscured Opalescent areas, no details of iris visible, size of pupil barely discernible Opaque, iris invisible	2 3 4
	B. AREA OF CORNEA INVOLVED  One quarter or less but not zero  Greater than one quarter but less than one half  Greater than one half but less than three quarters  Greater than three quarters, up to whole area	1 2 3 4
•	SCORE: A z B z 5 Total Maximum = 80	
IRIS	A. VALUES Folds above normal, congestion, swelling, circumcorneal injection (any or all or or a combination of any thereof), iris still reacting to light (sluggish re is positive) No reaction to light, hemorrhage, gross destruction (any or all of these)	these action 1
	SCORE: A z 5 Total Maximum - 10	
CONJUNCTIVA	A. REDNESS (refers to palpebral conjunctive only excluding cornes and iris) Vessels definitely injected above normal More diffuse, deeper crimson red, individual vessels not easily discernible Diffuse beefy red	1 2 3
•	B. CHEMOSIS Any swelling above normal (includes nictitating membrane) Obvious swelling with partial eversion of the lids Swelling with lids about half-closed Swelling with lids about half-closed to completely closed	1 2 3
-	C. DISCHARGE Any amount different from normal (does not include small amount observed in innecenthus of normal animals) Discharge with moistening of the lids and hairs just adjacent to the lids Discharge with moistening of the lids and hairs and considerable area around eye SCORE: (A + B + C) x 2 Total Maximum = 20	<b>3</b> J

\*Draize, John H. Dermal Toxicity, "Appraisal of the Safety of Chemicals in Foods, Drugs and Cosmetics", ASSOCIATION OF FOOD AND DRUG OFFICIALS OF THE U.S., 1959, pp 49-51

#### RATING OF TEST MATERIALS BASED ON EYE IRRITATION PROPERTIES.

RATING	RANGE	DEFINITION
Mon-irritating	0 - 0.5	To maintain this rating all scores at the 24 hour reading must be zero; otherwise, increase rating 1 level.
Practically Mon-irritating	Greater than 0.5 - 2.5	To maintain this rating, all scores at the 24 hour reading must be zero; otherwise, increase rating 1 level.
Minimally Irritating	Greater than 2.5 - 15.0	To maintain this rating, all scores at the 72 hour reading must be zero; otherwise, increase rating 1 level.
Mildly Irritating	Greater than 15.0 - 25.0	To maintain this rating, all scores at the 7 day reading must be zero; otherwise, increase rating 1 level.
Moderately Erritating	Greater than 25.0 - 50.0	To maintain this rating, scores at 7 days must be less than or equal to 10 for 60% or more of the animals. Also, mean 7 day score must be less than or equal to 20. If 7 day mean score is less than or equal to 20 but less than 60% of the animals show scores less than 10, then no animal among those showing scores greater than 10 can exceed a score of 30 if rating is to be maintained; otherwise, increase rating 1 level.
Severely Irritating	Greater than 50.0 - 80.0	To maintain this rating, scores at 7 days must be less than or equal to 30 for 603 or more of the animals. Also, mean 7 day scores must be less than or equal to 40. If 7 day mean score is less than or equal to 40 but less than 603 of the animals show scores less than or equal to 30, then no animal among those showing scores greater than 30 can exceed a score of 60 if rating is to be maintained; otherwise, increase rating 1 level.
Extremely Irritating	Greater than 80.0 -110.0	

<sup>\*</sup>Kay, J.H., Calandra, J.C., J. Soc. Cos. Chem., 13:281 - 289, 1962.

#### SCALE OF SCORES FOR ULTRAVIOLET FLUORESCEIN SCAN

Reading	Grade
Negative	0
Positive with an area one quarter or less	ž
Positive with an area greater than one quarter but less than one half	ý
Positive with an area greater than one half but less than three quarters	9
Positive with an area greater than three quarters, up to whole area	
tangerat agen an arati Artorzi Pisni filitz 6761.7512" No fil Mills 91.00	44

# MATERIAL SAFETY DATA SHEET

Required under OSHA's Hazard Communication Standard 29 CFR 1910-1200

IDENTITY (As Used on Label and	List) T. S. Red 305	Cake (C.I. Disper	rse Red 60)
Section I	**************************************		
Manufacturer's Name Chemica	al Co., Ltd.	Emergency Telephone Number	CONTROL Server to the server the server that the server
Address (Number, Street, City, State	The same of the sa	Telephone Number for information 06-220-3734	(Japan)
15, 5-Chome, Kit	:ahama	Data Prepared 5th Janua	
Higashi-ku, Osak	ta 541, Japan	Signature of Preparer (optional)	Attimustas proprietaria in infrastrum proprieta (approprieta in mandata in incidenta in mandata in incidenta i
Section I - Hezerdous Ingredients/I	dentity information		•
Hazardous Components (Specific Ch	emical Identity, Common Name (s	) OSHA PEL ACCIH TLV	Other Limits Recommended %(Optional)
•			•
Health Ha	zards : C.I. Dis	sperse Red 60	
	Eye irritant		aler ann an an an Airle ann ann an Camaille a
	Skin irritant		rgympolyndydanuad allifadd f y Lleidd f 24 dad lleidd Tylunda y few fewy gylan yn yman hafan y r - Arbedd
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Section 2 - Physical Characteristics			
Boiling Point	Not applicable	Specific Gravity (H <sub>2</sub> O=1)	0.5
Vapor Pressure (mm Hg)	Not applicable	Melting Point	More than 180°C
Vapor Density (AIR = 1)	Not applicable	Eveporation Rate (Butyl Acetate = 1)	Not applicable
Solubility in Water N	egligible		
Appearance and Odor Re	eddish cake , Odd	orless	
Section 8 - Fire and Explosion Ha	zerd Deta		
Flash Point (Method Used)	ot applicable	Flammable Limits Not applicable	LEL UEL
Extinguishing Media Wat	er, Carbon dioxid	le, Foam, Dry chemi	cal
Special Fire Fighting Procedures			•
Firefighters s	should be provided	l with air-supplied	respirator
Unusual Fire and Explosion Ilaza			
	None		

	Unstable I		Conditions to Avoid			- / BESPESSON.			
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	Stable	x						5 90	
Incompatibility (M			None	ongo malim w do ima Sir in State - Sec				:	
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Section % - Health	Hezerd Deta		4			,			
Route(s) of Entry		Inheletio	n?	Skin?	X		le	ngestion ?	}
Health Hazards (A	cute and Chronic)					olomono di America	in and in a second	<u> </u>	Annual Post Daniel Inches Manageria
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		-	(oral-mou		ore than				
Cercinogenicity:		D <sub>50</sub>	None		Monographs? No				gulated? No
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Signs and Sympton			case of ex						
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Medical Conditions Generally Aggrave	ted by Exposure	C	ongestion	of eye	?S				
		Eı	rythema of	skin					-
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Emergency and Fi	rst Aid Procedure	s I	n case of	contac	t with ey	es o	r skil	a, ln	mmedia
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DISPERSE RED 60

C.I. 60756

CAS 17418-58-5

## MATERIAL SAFETY DATA SHEET

BASF Corporation Chemicals Division 100 Cherry Mill Rood, Parsippony, New Jersey 87054, (201) 253-3400

BASF

SEP 2 2 1980

PRODUCT NUMBER: 232301

PALANIL® Red BF-N 200%

	SECTION	1	*Registered Trademark
TRADE NAME: PALANIL* Red BF-N 200	X.		
CHEMICAL NAME: Anthraquinone Dye			
SYNONYMS: None	FOR	MULA: C	:.1. Disperse Red 60
Olipasioni Parsil V. Dr.			
CHEMICAL FAMILY: Disperse Dyes			MOL. WGT.: N/A
SECTIO	N II - ING	REDIEN	TS
COMPONENT	CAS NO.	%	PEL/TLV - SOURCE
PALANIL* Red BF-N 200%Proprietary  Proprietary Mixture Containing:         C.I. Disperse Red 60  Dispersing Agents	N/A	100	2 mg/m3 BASF Wyandotte Corp. recommerdation
SECTION  BOILING/MELTING POINT 0760 mm Hg: N/A  VAPOR PRESSURE mm Hg 020 C: N/A	III - PHYSI		ATA 0-10.0 (5% Aqueous)
SPECIFIC GRAVITY OR BULK DENSITY: N/	A		
SOLUBILITY IN WATER: Dispersible		Color:	Bowl, Boot
APPEARANCE: Fine Powder	ODOR: Odorless		. Dark Red INTENSITY: N/A
SECTION IV - FIRE			
FLASH POINT (TEST METHOD): N/A			AUTOIGNITION TEMP: N/A
FLAMMABILITY LIMITS IN AIR (% BY VOL)	LOWER: N/A	<b>A</b>	UPPER: N/A
EXTINGUISHING Use water fog or s			
SPECIAL Firefighters show breathing apparatu	Is and turnout of	æar.	
UNUSUAL FIRE Adequate ventilation AND EXPLOSION minimize dust accumixture.	ion and cleanup umulation. May	MUST DO M form expl	aintained to osive dust-air
EMERGENC	Y TELEPHO	NE NUI	MBER

201-263-3400 THIS NUMBER IS AVAILABLE DAYS, NIGHTS, WEEKENDS, AND HOLIDAYS

CHEMTREC 800-424-9300

## SECTION V - HEALTH DATA

#### TOXICOLOGICAL TEST DATA:

PALANIL\* Red BF-N 200% Rat, Oral LD50 Rabbit, Skin Rabbit, Eyes

#### RESULT:

>5000 mg/kg. Slightly irritating Slightly irritating

#### **EFFECTS OF OVEREXPOSURE:**

Contact with eyes and skin may result in irritation. Ingestion may result in gastric disturbances. Inhalation of dusts may irritate the respiratory tract.

#### FIRST AID PROCEDURES:

Eyes--Flush eyes with flowing water at least 15 minutes.

If irritation develops, consult a physician.

Skin--Wash affected skin areas thoroughly with soap and water.

If irritation develops, consult a physician.

Ingestion--If swallowed, dilute with water and induce vomiting.

Never give fluids or induce vomiting if the victim
is unconscious or having convulsions.

Get immediate medical attention.

Inhalation--If inhaled, move to fresh air.

Aid in breathing, if necessary, and get medical attention.

## SECTION VI - REACTIVITY DATA

STABILITY:

Stable.

CONDITIONS TO AVOID:

N/A

CHEMICAL INCOMPATIBILITY:

N/A

HAZARDOUS DECOMPOSITION PRODUCTS: N/A

**HAZARDOUS POLYMERIZATION:** 

Does not occur

CONDITIONS TO AVOID:

N/A

CORROSIVE TO METAL: No

-

SECTION VII - SPECIAL PROTECTION

RESPIRATORY PROTECTION:
Approved dust respirator.

EYE PROTECTION:

Goggles.

PROTECTIVE CLOTHING:

Gloves, coveralls, apron, boots as necessary to minimize

OXIDIZER:

Mo

VENTILATION:

Use local exhaust to maintain levels below F.E.L.

OTHER:

Shower after handling. Clean clothing should be worn daily.

PRODUCT NUMBER: 232301 PALANIL* Red BF-	N 200%						
SECTION VIII - ENVIRONMENTAL DATA							
ENVIRONMENTAL TOXICITY DATA:							
None available.							
	•						
SPILL AND LEAK PROCEDURES:							
PALANIL* Red BF-N 200% is not a RCRA-regulated product. Spills should be contained and placed in suitable containers for disposal.							
HAZARDOUS SUBSTANCE SUPERFUND: No	RQ (lbs):						
WASTE DISPOSAL METHOD:							
Incinerate or bury as a solid in a lic Do not discharge into waterways or se	censed facility. Wer systems.						
HAZARDOUS WASTE 40CFR261: No	HAZARDOUS WASTE NUMBER:						
CONTAINER DISPOSAL:							
Dispose of in licensed facility. Recommend crushing or other means to p	prevent unauthorized reuse.						
SECTION IX - SHIF							
D.O.T. PROPER SHIPPING NAME (49CFR172.101-	102) HAZARDOUS SUBSTANCE (49CFR CERCLA LIST)						
	. No						
	REPORTABLE QUANTITY (RQ) None						
D.O.T. HAZARD CLASSIFICATION (CFR172.101-10 PRIMARY None	2) SECONDARY						
,							
D.O.T. LABELS REQUIRED (49CFR172.101-102)	D.O.T. PLACARDS POISON CONSTITUENT REQUIRED (CFR172.504) (49CFR172.203(K))						
None	None None None						
BILL OF LADING DESCRIPTION Dyes or Colors, Coal Tar, 0/T Indigo							
	•						
CC NO. 416	UN/NA CODENone						
	AINIAW PARE						

WHILE BASE CORPORATION BELIEVES THE DATA SET FORTH HEREIN ARE ACCURATE AS OF THE DATE HEREOF, BASE CORPORATION MAKES NO WARRANTY WITH RESPECT THERETO AND EXPRESSLY DISCLAIMS ALL LIABILITY FOR RELIANCE THEREON. SUCH DATA ARE OFFERED SOLELY FOR YOUR CONSIDERATION, INVESTIGATION. AND VERIFICATION.

UPDATED:

DATE PREPARED:

1 / 30 / 88

## SECTION X - PRODUCT LABEL

#### PALANIL\* Red BF-N 200%

CAUTION:

EYE AND SKIN CONTACT MAY RESULT IN IRRITATION.
INGESTION MAY RESULT IN GASTRIC DISTURBANCES.
INHALATION OF DUSTS MAY RESULT IN RESPIRATORY IRRITATION.

Use with local exhaust. Wear an approved dust respirator, goggles, gloves, coveralls, apron, boots and other protective clothing as necessary to prevent contact.

FIRST AID:

Immediately wash eyes with running water for 15 minutes. Eves -

If irritation develops, get medical attention.

Wash affected areas with soap and water. Skin -

Remove and launder contaminated clothing before reuse.

If irritation develops, get medical attention.
If swallowed, dilute with water and immediately induce vomiting Ingestion -

by sticking finger down victim's throat. Never give fluids or induce vomiting if the victim is

unconscious or having convulsions. Get immediate medical attention.

Inhalation - Move to fresh air. Aid in breathing if necessary and

gat immediate medical attention.

IN CASE OF FIRE: Use water fog or media proper to primary cause of fire. Firefighters should be equipped with self-contained breathing apparatus and turnout gear.

EMPTY CONTAINERS: All labeled precautions must be observed when handling, storing and transporting empty containers due to product residues. Do not reuse this container unless it is professionally cleaned and reconditioned.

DISPOSAL: Spilled material, unused contents and empty containers must be disposed of in accordance with local, state and federal regulations. Refer to our Material Safety Data Sheet for specific disposal instructions.

IN CASE OF CHEMICAL EMERGENCY: Call CHEMTREC day or night for assistance and information concerning spilled material, fire, exposure and other chemical accidents. 800-424-9300

ATTENTION: This product is sold solely for use by industrial institutions.

Refer to our Technical Bulletin and Material Safety Data Sheet regarding safety, usage, applications, hazards, procedures and disposal of this product. Consult your supervisor for additional information.

Made in West Germany Colors and Auxiliaries Group 0284

1.

DISPERSE RED 60

C.I. 60756

CAS 17418-58-5

## MATERIAL SAFETY DATA SHEET



MOBAY CHIMICAL CORPORATION Dyes and Pigments Division. Nobay Road Pittsburgh, PA 15205

August 11, 1986 ISSUE DATE August 1984 SUPERSEDES

TRANSPORTATION EMERGENCY: CALL CHEMTREC TELEPHONE NO: 800-424-9300; DISTRICT OF COLUMBIA: 202-483-7616 MOBAY NON-TRANSPORTATION EMERGENCY NO.: (412) 923-1800

## PRODUCT IDENTIFICATION

PRODUCT NAME....: Resolin Red FB 45301.12 PRODUCT CODE NUMBER ..: Anthraguinone CHEMICAL FAMILY....: CI Disperse Red 60 CI NAME..... T.S.C.A. STATUS....: In compliance

### HAZARDOUS INGREDIENTS

#### III. PHYSICAL DATA

APPEARANCE....: Powder COLOR....: Purple Mild aromatic ODOR....: SOLUBILITY IN WATER..: Miscible 8.0 - 9.0ph.....

### FIRE & EXPLOSION DATA

FLASH POINT....: Not applicable Water, dry chemical, CO2, foam EXTINGUISHING MEDIA..: SPECIAL FIRE FIGHTING PROCEDURES/UNUSUAL FIRE OR EXPLOSION HAZARDS: Firefighters should be equipped with with self-contained breathing apparatus to protect against potentially toxic and irritating fumes. Avoid dusting. Dust can form explosive mixtures with air.

#### HEALTH EFFECTS DATA

ANIMAL TOXICITY -ORAL, LD50

> (INGESTION)....: greater than 5,000 mg/kg - rats

greater than 10 mg/1 - 48 h - Leuciscus idus (L) FISH, LC50....:

slight irritant - rabbits EYE EFFECTS....: non-irritant - rabbits SKIN EFFECTS....:

HUMAN EFFECTS

Because the complete acute and chronic hazards of OF OVEREXPOSURE...:

this product have not been determined, employees should avoid exposure to it. Avoid contact with skin, eyes and clothing. Similar products have been shown to cause a temporary skin reaction (allergic

contact dermatitis) in some people.

Product Code: 45301.12 Page 1 of 3

## VI. EMERGENCY & FIRST AID PROCEDURES

SKIN CONTACT....:

EYE CONTACT..... Wash eyes immediately with large amounts of water,

occasionally lifting the upper and lower lids,

until no evidence of product remains (approximately 10-20 minutes). Get medical attention. Do not wear

contact lenses while handling this product.

Immediately wash skin with soap and plenty of

water. If a temporary skin reaction (rash) occurs

it should be treated as allergic contact

dermatitis. Launder contaminated clothing before

reuse.

INGESTION...... If this product has been swallowed, do not induce

vomiting. Qualified medical personnel should

remove the product by gastric levage and catharsis.

## VII. EMPLOYEE PROTECTION RECOMMENDATIONS

EYE PROTECTION....: Employees should wear protective goggles.

SKIN PROTECTION...: This material may be absorbed via the dermal route

if prolonged or widespread skin contact occurs.
Employees should avoid skin contact by wearing protective clothing. Long sleeve shirts, pants, rubber gloves, and rubber boots are recommended. Additional protection such as impervious suits are recommended when the potential for dermal contact is significant. Employees should wash their hands and face before eating and drinking, and shower

thoroughly before leaving work.

RESPIRATORY

PROTECTION....: Employees should avoid inhalation of dusts.

Wherever potential for dusting exists an

appropriate NIOSH approved respirator with dust

filter should be worn.

VENTILATION....: Use local ventilation if dusting is a problem.

Emergency showers and eye wash stations should be

available.

#### VIII. REACTIVITY DATA

OTHER....

STABILITY..... Stable

POLYMERIZATION....: Not applicable

INCOMPATIBILITY (MATERIALS

TO AVOID)..... Oxidizing and reducing agents.

HAZARDOUS DECOMPOSITION

PRODUCTS..... CO, CO, oxides of nitrogen, sulfur,

and potentially toxic fumes.

#### IX. SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Spills should be swept up and placed in containers. Spill area can be washed with water; collect wash water for approved disposal. WASTE DISPOSAL METHOD: Waste disposal should be in accordance with existing federal, state, and local environmental regulations.

> Product Code: 45301,12 Page 2 of 3

## X. SPECIAL PRECAUTIONS & STORAGE DATA

PRECAUTIONS TO BE TAKEN
IN HANDLING AND STORING: Store in dry place, away from excessive heat, in original or similar waterproof containers. Reseal containers immediately after use. Avoid unnecessary contact.

## XI. SHIPPING DATA

TECHNICAL SHIPPING NAME: Anthraquinone Dyestuff

D.O.T. HAZARD

CLASSIFICATION.....: Non-regulated

D.O.T. LABELS REQUIRED.: None FRT. CLASS BULK..... Dyes

FRT. CLASS PKG..... Coal Tar Dyes (NMFC 60000)

PRODUCT LABEL..... OlA

### XII. APPROVALS

REASON FOR ISSUE..... Revision

DATE APPROVED..... November 1985

APPROVED BY..... J. Mostowy

TITLE..... Senior Regulatory Compliance Specialist

Product Code: 45301,12 Page 3 of 3

## MATERIAL SAFETY DATA SHEET



000469

Wilmington, Delaware 19897
Phone (302) 575-3000 (24 hours)

RECEIVED

Porm No.: 4649h(A)

Date: 10/85

SECTION 1 NAME & HAZARD SUMMARY

DEC PERS

Material name:

DISPERSOL® Red B-2B Grains or Powder (C.I. Disperse Red 60)

Hazard summary (as defined by OSHA Hazard Communication Standard, 29 CFR 1910.1200):

Physical hazards: None Health hazards: None

Read the entire MSDS for a more thorough evaluation of the hazards.

	- Constitution and the Constitution of the Con	The state of the s
SECTION 2 INGREDIENTS	8	TLV (ACGIH)
C.I. Disperse Red 60 (CAS 17418-58-5)		Not listed
Other nonhazardous ingredients		Not listed

Ingredients not precisely identified are proprietary or nonhazardous. All ingredients appear on the RPA TSCA Inventory. Values are not product specifications. gt = greater than, lt = less than, ca = approximately

## SECTION 3 PHYSICAL DATA

Boiling point: Not applicable

Vapor pressure (mmHg at 20°C): No data

Vapor density (air = 1): No data Solubility in water: Dispersible

pH: No data

Specific gravity: No data

% Volatile by volume: Negligible

Appearance and odor: Red odorless grains or powder

## SECTION 4 FIRE AND EXPLOSION HAZARD DATA

Flash point (and method): Not applicable

Autoignition temp.: No data

Flammable limits (STP): Not applicable

#### Extinguishing media:

Not applicable. Use media suitable for surrounding fire.

## Special fire fighting protective equipment:

Self-contained breathing apparatus with full facepiece and protective clothing if involved in a fire of other materials.

## Unusual fire and explosion hazards:

This product may form explosive dust clouds in air.

## SECTION 5 REACTIVITY DATA

Stability:

Stable under normal conditions.

# SECTION 5 REACTIVITY DATA (continued)

Incompatibility (materials to avoid): Oxidizing agents

## Hazardous decomposition products:

Combustion products: Carbon dioxide, carbon monoxide, nitrogen oxides, ammonia,

## Hazardous polymerization: Will not occur.

## SECTION 6 HEALTH HAZARD ASSESSMENT

## General:

Limited toxicity data are available on this specific product; this health hazard assessment is based on the results of screening tests.

## Ingestion:

The acute oral  $LD_{50}$  in rat is above 5 g/kg. Relative to other materials, a single dose of this product is practically nontoxic by ingestion, Hodge, H.C. and Sterner, J.H., American Industrial Hygiene Association Quarterly, 10:4, 93,

## Bye contact:

This material is nonirritating in rabbit eye studies; no irritation is likely to

## Skin contact:

This material is mildly irritating in rabbit dermal irritation studies, but no irritation is expected to develop after contact with human skin.

## Skin absorption:

This product will probably not be absorbed through human skin.

#### Inhalation:

.No toxic effects are known to to be associated with inhalation of dust from this

## Other effects of overexposure:

No other adverse clinical effects are known to be associated with exposures to this

## Pirst aid procedures:

Skin: Wash material off the skin with copious amounts of soap and water. redness, itching or a burning sensation develops, get medical attention. Byes: Immediately flush with copious amounts of water for at least 15 minutes. If redness, itching or a burning sensation develops, have eyes examined and treated by ---continued---

# SECTION 6 HEALTH HAZARD ASSESSMENT (continued)

First aid procedures (continued):

Indestion: Give one or two glasses of water to drink. If gastrointestinal
symptoms develop, consult medical personnel. (Never give anything by mouth to an
unconscious person.)

<u>Inhalation</u>: Remove victim to fresh air. If cough or other respiratory symptoms develop, consult medical personnel.

## SECTION 7 SPILL OR LEAK PROCEDURES

Steps to be taken in case material is released or spilled:

Sweep up and recover or mix material with moist absorbent and shovel into waste container. Wash down spill area with water and flush to a sewer serviced by a wastewater treatment facility. Use care to minimize the amount of dyestuff that reaches the sewer.

#### pisposal method:

Discarded product is not a hazardous waste under RCRA, 40 CFR 261.

#### container disposal:

Puncture or otherwise destroy empty container before disposal.

## SECTION 8 SPECIAL PROTECTION INFORMATION

TLV® or suggested control value:

No TLV assigned. Minimize exposure in accordance with good hygiene practice.

#### Ventilation:

Use local exhaust to keep exposures to a minimum.

## Respiratory protection (specify type):

If needed, use MSHA-NIOSH approved respirator for dusts, mists and fumes whose TLV is greater than 0.05  $\mbox{mg/m}^3$ .

#### Protective clothing:

Gloves, apron and arm covers to avoid skin contact (see Section 9).

## Bye protection:

Safety glasses with side shields.

#### Other protective equipment:

Byewash station in work area.

## SECTION 9 SPECIAL PRECAUTIONS OR OTHER COMMENTS

Precautions to be taken in handling or storing:

Follow procedures specified in the National Fire Protection Association Codes and Standards for handling explosive dusts. Maintain good housekeeping to avoid dust buildup. Avoid skin contact; stains may be difficult to remove without injuring the skin.

The information herein is given in good faith but no warranty, expressed or implied, is made.

# ANTHRAQUINONE DYES AND RELATED CHEMICALS: REVIEW AND ASSESSMENT OF POTENTIAL ENVIRONMENTAL AND HEALTH ASPECTS

FINAL REPORT

#### prepared for

Dyes Environmental and Toxicology Organization, Inc. Scarsdale, New York

by

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> May 1982 Revised January 1983

SRI International 333 Ravenswood Avenue Menio Park, California 94025 (415) 326-6200 Cable: SRI INTL MPK TWX: 910-373-1246



**GLIENT PRIVATE** 

ACID BLUE 40

C.I. 62125

CAS 6424-85-7

# Research Laboratories, Inc.

TEST FOR EYE IRRITATION IN RABBITS

-steinsburg and wentz roads

post office box 203

spinnerstown, pennsylvania 18068

215-536-4110

FOR: .TOMS RIVER CHEMICAL CORPORATION

Test started

5/20/80

5/05/80

MB 80-4646 D Project number:

Test ended

6/93/80

Objective | To identify ocular irritation

potential

MATERIALS

#1207-00 Mix 1 TTS, Conc. 200% Sample label : Alizarine Blue 2GA

Sample received:

Description

Purple Powder

ANIMALS

Supplier(s) Ace Animals, Nicholas Helf

Sex

: 6 Female

New Zealand White rabbits, approximately 8 weeks old when received, were equilibrated for at least one week in this laboratory. Twenty-four hours pretest, the cornea of each animal was examined with fluorescein and cobalt blue light. Six apparently healthy rabbits, free from evidence of ocular irritation or damage, were selected for the test.

The animals were identified by cage tags noting the test material, starting date, animal number and sex. In addition, each animal was identified by a uniquely numbered eartag.

The animals were housed 1/cage in suspended wire mesh cages. Any extraneous material which might produce eye irritation was excluded from the area. Fresh Purina rabbit chow and water were freely available. The animal room, reserved exclusively for rabbits on acute tests, was maintained at 20 - 21°C and was kept clean in accordance with the standards of AAALAC of which this laboratory is an approved member.

#### METHODS

Treatment - The test material (0.1 ml or 0.1 g) was placed once into the conjunctival sac of one eye of each of six rabbits. The lids were held together briefly to insure adequate distribution of the test material. The untreated eye of each rabbit served as a control.

Observations - The general health of the rabbits was monitored during the observation period. The ocular reactions of the cornea, iris and conjunctiva were graded at 1 hour and at 1, 2, and 3 days after dosing. If any score was



TEST FOR EYE IRRITATION IN RABBITS

Page -2-

Project #: MB 80-4646 D

Sample #: 1207-00

noted on Day 3, the eyes were read again on Day 7. If any score was noted on Day 7, the eyes were read again on Day 14. Fluorescein and cobalt blue light were used in scoring ocular reactions on Days 1 and 3 and on Days 7 and 14, if necessary. Ocular reactions were graded as described by Draize, J.H. et al., J. Pharm. Exp. Ther. 82:377-390, 1944. The scores were interpreted by the method of Kay, J.H. Calandra, J.C. J. Soc. Cos. Chem., 13:281-289, 1962.

#### RESULTS

MEAN SCORES: HOUR DAYS 16.33 39.7 33.33 32.66 7.66 2.66

#### CONCLUSION

The test article is moderately irritat

#### SUMMARY 0 F

Corneal opacity was present in 4/6 eyes. In one animal, it persisted to Day 14. Iritis, noted in all eyes, was cleared by Day 7.

Mild to moderate conjunctival irritation, noted in all animals, was generally clear by

## QUALITY ASSURANCE EVALUATION

The quality assurance unit reviewed various aspects of the study, raw data and final report on the following dates:

> June 3, 1980 June 4, 1980 June 25, 1980

Wality Assurance

Respectfully submitted. Sear M. Moreno 6/29. Oscar M. Moreno, Ph.D. Susang. Weatleby Sysan E., Weatherby, Study Director Elizabeth L. Altenbach, Archi

Submitted: 7/01/80

The raw data is filed at MB Research by project number. The final report is filed by sponsor name and project number.

Saue	-3-	YE IRRITATION IN RABBITS					MB εn-	
An.No.	Item	n Tissue Reading	Hour 1	1	2	3	)ay 7	14
5877	A B	Cornea Opacity Area 1. Cornea Total = (AxB) x 5	0 0 0	4 4 80	3 4 60	3 4 60	2 1 10	2 1 10
	C	<pre>Iris 2. Iris Total = C x 5</pre>	0	?	1 5	15	0	0
	D E F	Conjunctiva Redness Chemosis Discharge 3. Conjunctiva Total = (D+E+F) x 2	2 <sup>a</sup> 2 2 <sup>b</sup> 12	1 ad 2 b 3 b	1 2 2 10	1 2 2 10	1 2 1 8	1 1 1 6
	Tot	als added = $1 + 2 + 3$	12	92	75	75	18	16
	UV	Fluorescein scan		3		3	g-cong	1
5878	A B	Cornea Opacity Area 1. Cornea Total = (AxB) x 5	0° 0 0	0 0	0 0 0	0 0 0	0	0 0 0
	C	<pre>Iris 2. Iris Total = C x 5</pre>	1 5	0	0	0	0	0
	D E F	Conjunctiva Redness Chemosis Discharge Conjunctiva Total = (D+E+F) x 2	2 <sup>a</sup> 2 2b 12	1 2 2 <sup>b</sup> 10	1 2 8	1 1 1 6	1 0 <sub>b</sub> 0 <sup>b</sup> 2	0 0 0 0
	Tota	als added = 1 + 2 + 3	17	10	8	6	2	0
	UV 1	fluorescein scan		2		2	0	0
5887	A B	Cornea Opacity Area 1. Cornea Total = (AxB) x 5	0 0 0	0 0	2 1 10	2 1 10	- 0 0	0
	C	<pre>Iris 2. Iris Total = C x 5</pre>	0 0	15	1	<b>T</b> 5	0	0
	D E · F	Conjunctiva Redness Chemosis Discharge 3. Conjunctiva Total = (D+E+F) x 2	2 <sup>a</sup> 3 <sub>b</sub> 16	2 2 2 12	2 2 2 12	2 2 <sub>b</sub> 2 <sup>b</sup>	1 0 1	0 0 0 0
	Tota	11s added = 1 + 2 + 3	16	17		27	4	0
	UV f	luorescein scan		3		2	Same	0

a = conjunctiva stained purple by material
b = area at eye stained purple by material
c = cornea stained purple by material
d = material in eye

	OR EYE IRRITATION IN RABBITS					MB 80-4	
An.No.	Item Tissue Reading	Hour 1	· ·	2		ay 7	14
5888	A Cornea Opacity B Area 1. Cornea Total = (AxB) x 5	0° 0 0	0 0 0	0 0 0	0	0 0	0
	C Iris 2. Iris Total = C x 5	1 5	1	0	0	0	0
	D Conjunctiva Redness E Chemosis F Discharge 3. Conjunctiva Total = (D+E+F) x 2	2 <sup>a</sup> 3 2b 14	2 3 <sub>b</sub> 36	2 2 1 10	2 1 1 8	1 0 0 0 2	0 0 0
- 100001-11	Totals added = 1 + 2 + 3  UV Fluorescein scan	19	21 2	10	8	2	0
5881	A Cornea Opacity B Area 1. Cornea Total = (AxB) x 5	0 0 0	3 <sup>c</sup> 2 30	1 20	4 1 20	2 1 10	0
	C Iris 2. Iris Total = C x 5	1 5	1 5	15	1 5	0	0
	D Conjunctiva Redness E Chemosis F Discharge 3. Conjunctiva Total = (D+E+F) x 2	2 <sup>a</sup> 2 2 <sup>b</sup> 12	2 <sup>ad</sup> 3 <sub>b</sub> 16	1 2 2 10	1 2 2 10	1 0 1 4	0 0 0 0
	Totals added = $1 + 2 + 3$	17	51	35	35	14	0
and the second s	UV fluorescein scan		2		2	1	0
5833	A Cornea Opacity B Area 1. Cornea Total = (AxE) x 5	0° 0 0	2 3 30	3 2 30	3 2 3	- 0 0 0	0 0 0
	C Iris 7 Total = C x 5	1 5	15	5	5	0	0
	D Conjunctiva Redness E Chemosis F Discharge 3. Conjunctiva Total = (D+E+F) x 2	2 <sup>a</sup> 2 2 <sup>b</sup> 12	2 <sup>a</sup> 2 2 <sup>b</sup> 12	2 2 1 10	2 2 1 10		0 0 0
	Totals added = $1 + 2 + 3$	17	47	45	45	E.	0 ,
	UV fluorescein scan		O,		3	Ú	0

a = conjunctiva stained purple by material
b = area at eye stained purple by material

c = cornea stained purple by material
d = material in eye

#### SCALE OF SCORES FOR GRADING THE SEVERITY OF OCCULAR LESIONS.

	0.000.000.000	
OCULAR TISSUE		SECTING
CORNEA	A. OPACITY - Degree of Density - Area which is most dense is read Scattered or diffuse area, details of iris clearly visible Easily descernible translucent areas, details of iris slightly obscured Opalescent areas, no details of iris visible, size of pupil barely discernible Opaque, iris invisible	
·	B. AREA OF CORNEA INVOLVED  One quarter or less but not zero  Greater than one quarter but less than one half  Greater than one half but less than three quarters  Greater than three quarters, up to whole area	Z
	SCORE: A x B x 5 Total Maximum = 80	
IRIS	A. VALUES Folds above normal, congestion, swelling, circumcorneal injection (any or all or or a combination of any thereof), iris still reacting to light (sluggish reals positive) No reaction to light, hemorrhage, gross destruction (any or all of these) SCORE: A x 5 Total Maximum = 10	these sction 2
COHJUNCTIAN	A. REDNESS (refers to palpebral conjunctive only excluding cornea and iris) Vessels definitely injected above normal Pore diffuse, deeper crimson red, individual vessels not easily discernible Diffuse beefy red	1 3
	B. CHEMOSIS Any swelling above normal (includes nictitating membrane) Obvious swelling with partial eversion of the lids Swelling with lids about half-closed Swelling with lids about half losed to completely closed	7 Z 3
	C. DISCHARGE  Any amount different from normal (does not include small amount observed in inner canthus of normal animals)  Discharge with moistening of the lids and hairs just adjacent to the lids  Discharge with moistening of the lids and hairs and considerable area around eye  SCORE: (A + B + C) x 2 Total Maximum = 20	2 3 .

\*Draize, John H. Dermal Toxicity, "Appraisal of the Safety of Chemicals in Foods, Drugs and Cosmetics", ASSOCIATION OF FOOD AND DRUG OFFICIALS OF THE U.S., 1959, pp 49-51

RATING OF	TEST	MATERIALS	BASED	ON	EAL	IRRITATION	PROPERTIES
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rating	range	DEFINITION
Non-Irritating	0 - 0.5	To maintain this rating all scores at the 24 hour reading must be zero; Otherwise, increase rating I level.
Practically Non-irritating	Greater than 0.5 - 2.5	To maintain this rating, all scores at the 24 hour reading must be zero; otherwise, increase rating 1 level.
Minimally Irritating	Greater than 2.5 - 15.0	To maintain this rating, all scores at the 72 hour reading must be term; otherwise, increase rating   level.
Mildly Irritating	Ereater than 15.0 - 25.0	To maintain this rating, all scores at the 7 day reading must be zero; otherwise, increase rating 1 level.
Moderately Irritating	Greater than 25.0 - 50.0	To maintain this rating, scores at 7 days must be less than or equal to 10 for 60% or more of the animals. Also, mean 7 day score must be less than or equal to 20. If 7 day mean score is less than or equal to 20 but less than 60% of the animals show scores less than 10, then no animal among those showing scores greater than 10 can exceed a score of 30 if rating is to be maintained; otherwise, increase rating 1 level.
Severely Irritating	Greater than 50.0 - 80.0	To reintain this rating, scores at 7 days must be less than or equal to 30 for 60% or more of the animals. Also, mean 7 day scores must be less than or equal to 40. If 7 day mean score is less than or equal to 40 but less than 60% of the animals show scores less than or equal to 30, then no animal among those showing scores greater than 30 can exceed a score of 60 if rating is to be maintained; otherwise, increase rating 1 level.
Estremely Irritating	Greater than 80.0 -110.0	See 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1

<sup>\*</sup>Kay, J.H., Calandra, J.C., J. Soc. Cos. Chem., 13:281 - 289, 1962.

## SCALE OF SCORES FOR ILLTRAVIOLET FLUORESCEIN SCAN

Reading Negative		Grade
Positive with an area	one quarter or less greater than one quarter but less than one half greater than one half but less than three quarters greater than three quarters, up to whole area	. 2

ACID BLUE 40

C.I. 62125

CAS 6424-85-7

#### Kesearch L aboratories.

TEST FOR PRIMARY DERMAL IRRITATION IN RABBITS

MB 80-4646 C

steinsburg and wents roads

post office box 203

FOR: TOMS RIVER CHEMICAL CORPORATION spinnerstown, pennsylvania 18068

215-536-4110 Test started ·Test ended

5/20/80 5/23/80

Objective |

Project number:

To identify dermal irritation

potential as defined in 16 CFR 1500.3

MATERIALS

Sample label

#1207-00 Mix #1 TTS, Conc.200%

Sample received: 5/05/80

Alizarine Blue 2GA

Description

Purple Powder - used as 50% m/v mixture in distilled water

ANIMALS

Surrlier(s)

Ace Animals, Perfection Breeders Sex

: 6 Hales

New Zealand White rabbits, approximately 8 weeks old when received, were equilibrated for at least one week in this laboratory. Six apparently healthy rabbits were select for the test.

The animals were identified by cage tags noting the test material, starting date, animal number and sex. In addition, each animal was identified by a uniquely numbered metal eartaq.

The animals were housed 1/cage in suspended wire mesh cages. Fresh Purina rabbit cho and water were freely available. The animal room, reserved exclusively for rabbits of acute tests, was maintained at 20 - 21°C and was kept clean in accordance with the standards of AAALAC of which this laboratory is an approved member.

#### METHODS

Site Preparation - The fur was clipped from the back and sides of the animals. The back to the left of the spinal column of all animals was abraded. The abrasions, extending the length of the exposure site, scratched the stratum corneum but did not reach the derma or produce bleeding. The back to the right of the spinal column remained intact.

Treatment - Six rabbits were dosed once dermally at one abraded and one intact site/ animal. 0.5 g (if the material was solid) or 0.5 ml (if the material was liquid) was applied to each site beneath 2.5 cm square gauze patches. The patches were secured with adhesive tape and the trunks were wrapped with impervious material. The test material was kept in contact with the skin for 24 hours, at which time the wrappings were removed.

Observations and Calculations - Dermal reactions were scored at 24 and 72 hours by the Draize scoring system (attached). The primary irritation index was calculated as cited in 16 CFR 1500.41.



TEST FOR PRIMARY DERMAL IRRITATION IN RABBITS

Page -2-

Project #: MB 20-4646 C

Sample #: 1207-00

RESULTS

PRIMARY DERMAL INDEX:

0.17

CONCLUSION

The test material is minimally irritating.

SUMMARY F DATA

Slight edema was noted in 3/6 animals  $\tilde{a}_{\text{o}}$  24 hours.

#### QUALITY ASSURANCE EVALUATION

The quality assurance unit reviewed various aspects of the raw data and final report on the following dates:

May 27, 1980 June 25, 1980

Jon S. Harwick

Quality Assurance

Respectfully submitted,

10-21 M. Moreno, Ph.D.

Oscar H. Horeno, Ph.D.

Susan E. Weatherby 27 June 80

Susan E. Weatherby Study Director

Elizabeth J. Mitenbach, Archivist

Submitted: 7/01/80

The raw data is filed at MB Research by project number. The final report is filed by sponsor name and project number.

Project #: MB 80-4646 Code #: 1207-00 ·

INDIVIDUAL SCORES

			RABBI	IT EARTA	G NUMBE	ER .	Mea
	5546	5635	5636	5893	5576	5673	Sco
Erythema & Eschar Formation	•	_				-	
Intact skin - 24 hours Intact skin - 72 hours	0 0	0	0	Õ	0	0	0
Abraded skin - 24 hours	0	0 0	0	0 0	0 0	0	Ō
Abraded skin - 72 hours	Ö	Ŏ	0	0	Ü	0	0
Edema					•	•	0
Intact skin - 24 hours	C	1	0	0	, 0,	0	
Intact skin - 72 hours	0	Ō	Ŏ	ŏ	Õ	0	0
Abraded skin - 24 hours	0	1	0	0 1	ļ	Ö	U N
Abraded skin - 72 hours	U	0	0	0	O	Ö	Ö
Sum of Mean Scores =						0	
Primary Dermal Index = Sum of Mean Scores/4						n	
Evaluation of Skin Reactions					"		
Erythema & Eschar Formation:							
No erythema Very slight erythema (hamalu annum a							
Very slight erythema (barely perceptible)  Well defined erythema							
Moderate to severe ervthema							
Severe erythema (beet red	severe erythema (beet redness) to slight eschar formation						
(injuries in depth)							

Edema Formation:

No edema Very slight edema (barely perceptible) Slight edema (edges of area well defined by definite raising) Moderate edema (raised approximately 1 millimeter) Severe edema (raised more than 1 millimeter and extending beyond the area of exposure)

The mean values (6 rabbits) for erythema/eschar and edema formation on intact and abraded skin at 24 and 72 hours (a total of 8 values) are added and divided by 4 to give the Primary Irritation score.

The conclusion was derived from the Primary Irritation Index as interpreted by the following table:

PRIMARY IRRITATION INDEX -	CONCLUSION
0 0.1 - 0.5 0.6 - 1.5 1.6 - 3.0 3.1 - 5.0 5.1 - 6.5 6.6 - 8.0	Non-Irritating Minimally Irritating Slightly Irritating Mildly Irritating Moderately Irritating Severely Irritating Extremely Irritating

ACID BLUE 40

C.I. 62125

CAS 6424-85-7

# B Research Laboratories.

TEST FOR ACUTE DERMAL TOXICITY IN RABBITS

TUMS RIVER CHEMICAL CORPORATION FOR:

post office box 203

steinsburg and wentz roads

spinnerstown, pennsylvania 18068

Project number: MB 80-4646 B

Test started 5/22/80 Test ended 6/06/80

215-536-4110

: To determine dermal toxicity

MATERIALS

Sample label : #1207-00 Mix 1TTS, Conc. 200% Alizarine Blue 2GA

Sample received:

5/05/80

Description

Purple Powder - used as 50% m/v mixture in distilled water

ANIMALS

Supplier(s) Perfection Breeders

Weight range 2.0 - 2.5 kgSex 2 Male - 2 Femal

New Zealand White rabbits, at least 8 weeks old when received, were equilibrated for at least one week in this laboratory. Two male and two female apparently healthy rabbits, were selected for the test.

The animals were identified by cage tags noting the test material, starting date, animal number and sex. In addition, each animal was identified with a uniquely numbered metal eartag.

The animals were housed 1/cage in suspended wire mesh cages (30" x 18" x 18"). Fresh Purina rabbit chow and water were freely available. The animal room, reserved exclusively for rabbits on acute tests, was maintained at 20 - 20°C and was kept clean in accordance with the standards of AAALAC of which this

#### METHODS

Site Preparation - 24 hours prior to dosing, the fur was clipped from the backs of the animals. The clipped area was 200 square cm, approximately 10% of the body surface. Just prior to dosing, abrasions were made in one half of the rabbits. The abrasions, extending the length of the exposure site, scratched the stratum corneum but did not reach the derma or produce bleeding.

Treatment - Two male and two female rabbits were dosed at 2.0 g/kg. For liquid materials the dose was based on the sample weight as calculated from the specific gravity. The test material was applied once dermally to the prepared site under gauze patches. The patches were secured with adhesive tape and the trunks were wrapped with impervious material. The test material was kept in contact with the skin for 24 hours, at which time the wrappings were removed. An estimate of the amount of material remaining was recorded. The exposure site was washed with warm tap water to remove excess material.

Observations - Dermal reactions were scored at 25 hours, 7 and 14 days by the



TEST FOR ACUTE DERITAL TOXICITY IN RABBITS

Page -2-

Project #: MB 30-0646 P

Sample #: 1207-00

Draize scoring system (attached). The rabbits were observed daily for 14 days for signs of toxicity, pharmacological effects and mortality. Body weights were recorded pretest and in the survivors at 7 and 14 days.

Termination - At 14 days, the survivors were sacrificed. All animals were examined for gross pathology.

#### RESULTS

LD 50: Greater than 2.0 g/kg of body weight

MORTALITY: 1/2 Male, Animal #5901 Day 2, 0/2 Female

INDIVIDUAL BODY WEIGHTS AND SKIN GRADES:

EARTAG	DOSE VOLUME	WE I GH <u>0</u> <u>7</u>	TS - kg 14	% REII.	Re <u>25h</u>	edness <u>7</u>	14	<u>25h</u>	Edema	14
5901 -M 5903 -M 5924 -F 5928 -F	8.0 10.0 8.4 9.2	2.0 2.5 2. 2.1 2. 2.3 2.	1 2.1	90 90 90 90	0 1 1 0	1	0 0 1	0 0	0 0 0	0

ab = abraded

% Rem. = the amount of material remaining on the skin, gauze and occlusive binding at 24 hours, after the occlusive binding was removed.

#### EVALUATION OF SELS MACTIONS

E ESTIMAN E ESCHAE FORMATION:

BO COTHERN

VEST SLIGHT COTHERN (BARCLY PERCEPTIBLE)

MILL SCHIRCE ESTIMAN

POSTANTS TO STUTE COTHERN

SCHIRC COTHERN (BECT STONESS) TO SLIGHT ESCHAR

FORMATION (INJURIES IN DEPTH)

#### Corne Formation:

BO COUNT VIOT BLIGHT EDERA (BARCLY PERCEPTIBLE) SLEGHT EDERA (EDGES OF ANIA WELL DEFINED BY DEFINITE INSTANCES FOCKANTE SOENA (BAISED APPROXIMATELY I MILLIPETER) SLYBAL EDERA (BAISED MORE THAN I MILLIPETER AND ENTENDIGG BETOMD THE AREA OF ELYCSARE)

3

TOXICITY IN RABBITS	
DERMAL TOX	
ACUTE DER	
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2 9 7 0	9	
<i>⊃</i> 	5	
-	7	
	m	
	2	7
<b>∥</b> DAY		۵
HOUR	0	
@ 2.0 g/kg HOUR	& Sex	
0 8	An.	5901 5903 5924 5928
	altin	

AT ALL TIMES NOT MENTIONED, ANIMALS APPEARED NORMAL

D = diarrhea V = abdomen bloated W = emaciation X = few feces Z = dead

NECROPSY	OBSERVATIONS:	5901 D	5903 S	5927
			×	×
Cung(s):	: congestion sted   skin scaly	<b>⊢</b> ⊢		

5928 S

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<b>व्यक्ता</b>	THE REAL PROPERTY.	Strings

TEST FOR ACUTE DERMAL TOXICITY IN RABBITS Page -4-

Project #: 18 80-4646 Sample #: 1207-00

#### CONCLUSION

The test article is not toxic, as defined in 16 CFR 1500.3.

#### SUMMARY OF DATA

One male animal died from a dermal dose of Alizarine Blue 2GA at 2.0 g/kg on Day 2.

Diarrhea was the only predeath toxic sign. The surviving animals were generally normal Slight erythema was noted throughout the study. Edema was not present.

Body weights and necropsy findings of survivors were generally normal. Congested lungs and wasting of the body were noted in the spontaneous death.

#### QUALITY ASSURANCE EVALUATION

The quality assurance unit reviewed various aspects of the study, raw data and final report on the following dates;

May 23, 1980 June 9, 1980 June 24, 1980

m S. Harwick Juality Assurance

Respectfully submitted,

Occar M. Moreno, Ph.D.

Oscar M. Horeno, Ph.D.

Daniel R. Cerven, Study Director

Elizabeth & Altenbach, Archivis Submitted: 7/01/80

The raw data is filed at MB Research by project number. The final report is filed by sponsor name and project number.

DISPERSE RED 60

C.I. 60756

CAS 17418-58-5

# MATERIAL SAFETY DATA SHEET

Required under OSHA's Hazard Communication Stendard 29 CFR 1910-1200

IDENTITY (As Used on Lebel as	id List) O C D i CC		
	T. S. Red 30	5 Cake (C.I. Dispe	erse Red 60)
Section 1	•		
Manufacturer's Name Chemic		Emergency Telephone Number	
Address (Number, Street, City, State	e, and ZIP Code)	Telephone Nurpher for information 06-220-3734	(Japan)
15, 5-Chome, Ki	tahama	Data Personal	ary, 1987
<u>Higashi-ku, Osa</u>	ka 541, Japan	Signature of Preparer (optional)	
Section I - Hezerdous Ingredients/	Identity Information		•
Hazardous Components (Specific C	hemical Identity, Common Name (s	)) OSHA PEL ACGIH TLV	Other Limits Recommended %(Optional)
77 7 4 + . 72			·
Health H		sperse Red 60	
	Eye irritant		
	Skin irritant		
	•		
·•			and the second s
		Carrier and particular and particula	
·			<u> </u>
*			
		•	
Section 2 - Physical Characteristics	3		
Boiling Point	Not applicable	Specific Gravity (H2 O=1)	0.5
Vapor Pressure (mm Hg)	Not applicable	Melting Point	More than 180°C
Vapor Density (AIR = 1)	Not applicable	Eveporation Rate (Butyl Actate=1)	Not applicable
Solubility in Water N	egligible		
Appearance and Odor Re	eddish cake , Odd	orless	
Section & - Fire and Explosion Ha	zerd Deta	namen de gregoriament de November (de November de Constante de November de Constante de November de November d La constante de November d	
Flash Point (Method Used)	ot applicable	Flammable Limits Not applicable	LEL UE!
Extinguishing Media Wat	er, Carbon dioxid	le, Foam, Dry chemi	201
Special Fire Fighting Procedures		, - comp way cuelling	
Firefighters s	hould be provided	with air-supplied	respirator
Unusual Fire and Explosion Hezas	de		
enzour zostronzaniek 4. Edite Sporza Constit Communication 2 de feministration Communication de l'application de l'activité ministration de l'activité de l'application de l'activité de	None		

Section 1 - React	tvity Data					
Stability	Unstable		Conditions to Avoid			
	Stable	X				
Incompatibility (	Materials to Avoid	d)	None		<del></del>	
Hazardova Decon	aposition or Bypro	oducts	Forms NO,	CO when h	eated to	burning
lfazardous Polymerization	May Occur		Conditions to Avoid			
	Will Not Occur	x	b			The Control of the Co
Section N - Hoalth	Hezard Data					
Route(s) of Entry		Inhele	tion?	Skin? X		Ingestion?
Health Hazards (	Acute and Chronic	:)				
		Eye-	irritant (rab	bit) Ski	n-irrita	nt (rabbit)
		LD <sub>50</sub>	(oral-mouse	) more t	han 5000	mg/kg
Carcinogenicity:		NTP?	None	IARC Monographs	None	OSHA Regulated? None
<del></del>				······································		
Signs and Sympu	ms of Exposure	In	case of exce	ss contac	t with e	yes or skin without
first a	id, cause	es a	reversible i	nflammato	ry effec	t on eyes or skin.
Medical Condition Generally Aggrave	s ated by Exposure	-	Congestion of	eyes		
		1	Erythema of s	cin		
Emergency and F	irst Aid Procedur	es	In case of co	ntact wit	h eyes o	r skin, immediately
flush e	yes or sk	cin	with plenty o	f water,	in case	of inhalation,
remove	to fresh	air	and in case	of ingest	ion, imm	ediately induce
			ct a physicia			
			4 4			
				****		)
Section % Preceu	tions for Sale Va	odline	and the			
Steps to Se Taken						A Marian Control of the Control of t
					· · · · · · · · · · · · · · · · · · ·	4 4 9
			ovel into sui	table con	tainers	and then wash
	with wat				······································	
Weste Disposel M	ethod To b	oe a	ble to be inc	inerated	by the a	dequate method.
	A CONTRACTOR OF THE PROPERTY O	, , , , , , , , , , , , , , , , , , , ,		,		
Precautions to Be				Mark Market Mary and a second of the second	the State Comments of	
			n stored or h			nperature
Other Precautions	пои	ne: k	nown to Sumit	omo Chemi	cal	
Section 15 - Contro	l Measures			30);(m-14m, 100-13-0);(p-12		and discovers on the principles of the continues of the Continues and the Continues of the
Respiratory Prote	ction (Specify Typ	e)	iibaad lamas			to contilation in
Ventilation ·	Local Exhaust	2	Acceptable	Special	<u> augud</u>	te ventilation in workroom.
	Mechanical (Gen	erai)	Preferred	Other		
Protective Gloves	Rub	ber	gloves	Eye Protection	Safet	y goggles
Other l'role clive	The second section of the sect	ng-residente summer - semi	Eye bath,	mask. com		
Work/llygienic [	racticea	No:	ne known to Su			
		9 . P. I	i wide abovers we	and VIIIV wh	.cmlcal	

DISPERSE RED 60

C.I. 60756

CAS 17418-58-5

# 1 B Research Laboratories, Inc.

REPORT ON RABBIT EYE IRRITATION

For: Toms River Chemical Corporation

Project number MB 77- 2432

Sample Disperse Pink N Granules

Mix & 69

Concentration: 100% TR # 77-1012

CODE NO: 4080-40

steinsburg and went: roads post office box 203 spinnerstown, pennsylvania 18068

215-536-4110

Material received: 12/21/77

Test started: Test ended:

1/17/78

Description:

Red Powder

This study was designed to determine ocular irritation potential of a material when instilled in the rabbit eye.

Six New Zealand White rabbits weighing approximately 2.5 kg were housed individually in suspended wire mesh cages in temperature and light controlled rooms. Purina rabbit chow and water were available ad libitum.

The rabbits were equilibrated in this laboratory for at least seven days. Rabbits with irritated or damaged eyes were not used in

The test material (0.1 ml liquid or 0.1 ml-equivalent solid) was instilled in the lower conjunctival sac of one eye of each rabbit and the lids held closed for approximately one second to insure even distribution of the test material over all surfaces of the eye. The other

eye served as an untreated control.

The eyes were examined and graded for irritation and corneal damage at 1, 24, 48 and 72 hours after instillation with a hand slit lamp. Eyes not returning to a score of zero by 72 hours were graded on the seventh day after instillation. Eyes still not returning to a score of zero were graded on the fourteenth day after instillation. All eyes were examined by applying 1 drop of 1% fluorescein sodium ophthalmic solution, U.S.P., to the cornea pre-test, 24, 72 hours and 7 and 14 days after instillation.

The ocular reactions were graded and interpreted as described in "Appraisal of the Safety of Food, Drugs, and Cosmetics", Association of Food and Drug Officials of the United States, 1959 with the assistance of the "Illustrated Guide for Grading Eye Irritation by Hazardous Substances". A copy of the score and interpreting system is attached.

The individual scores are presented on the attached pages.

The mean scores are:

Hour 1 8.50 Day 1 0.33 Day 2 0 Day 3 O Day 7 Day 14

CLASSIFICATION:

Minimally Irritating.

Respectfully submitted,

Oscar M. Moreno, Ph.D.

President

3/21/78



Rabbit Eye Irritation Study Individual Daily Scores	Mate	rial:	Dis	perse	Pir	ık N Granule:
An. No. Item Tissue Reading		Our 1		2 3	Day 7	' 14
1 A Cornea Opacity B Area		o 0		0	er	8 <b>- 19</b>
1. Cornea Total = (AxB) x 5  C Iris 2. Iris Total = C x 5	3 8	l 0				
D Conjunctiva Pedness E Chemosis F Discharge 3. Conjunctiva Total = (D+E+F) x 2	]	L 1		0 0		
Totals added = 1 + 2 + 3  UV Fluorescein scan	13	2	0	0		
2 A Cornea Opacity B Area 1. Cornea Total = (AxB) x 5	0		0	0	- Care Care Care Care Care Care Care Care	
C Iris 2. Iris Total = C x 5	0	0	0	0		
D Conjunctiva Redness E Chemosis F Discharge 3. Conjunctiva Total = (D+E+F) x 2	1 0 1 4	0000	0000	0000		
Totals added = 1 + 2 + 3	4	0	0	0		
		0		0		-
A Cornea Opacity B Area 1. Cornea Total = (AxB) x 5	0	0	0	0		
C Iris 2. Iris Total = C x 5	0	0	0	0	•	
D Conjunctiva Redness E Chemosis F Discharge 3. Conjunctiva Total = (D+E+F) x 2	0	0000	0000	0		
Totals added = 1 + 2 + 3  UV fluorescein scan	0	0	O	0		

Rabbit Eye Irritation Study Individual Daily Scores

Material: Disperse Pink N Granules

								- 4
An.No.	Item Tissue Reading	HO T	r 1	2	3	Nay 7	14	
4	A Cornea Opacity B Area 1. Cornea Total = (AxB) x 5	0	0	0	0			
	C Iris 2. Iris Total = C x 5	1 5	0	0	0			
	D Conjunctiva Redness E Chemosis F Discharge 3. Conjunctiva Total = (D+E+F) x 2	1 2 0 6	000	0	0000			
	Totals added = 1 + 2 + 3	11	0	0	0			
	UV Fluorescein scan		0		C			
5	A Cornea Opacity B Area 1. Cornea Total = (AxB) x 5	0	0	0	0	di di santa da sergi si di santa da per gang pengangan penganggan penganggan penganggan penganggan penganggan		
	C Iris 2. Iris Total = C x 5	0	0	0	0			
	D Conjunctiva Redness E Chemosis Discharge 3. Conjunctiva Total = (D+E+F) x 2	1 2 1 8	0 0 0	0000	0			**
	Totals added = 1 + 2 + 3	8	0	0				
	UY fluorescein scan	0	0	V	0			
6	A Cornea Opacity 8 Area 1. Cornea Total = (AxB) x 5	0	0	0	0			
	C Iris 2. Iris Total = C x 5	1 5	0	0	0			
	D Conjunctiva Redness E Chemosis F Discharge 3. Conjunctiva Total = (D+E+F) x 2	10 2 2	0	000	0			
1	Totals added = 1 + 2 + 3	15	0	0	0			
Į.	JV fluorescein scan		0	and.	O			

## SCALE OF SCORES FOR GRADING THE SEVERITY OF OCULAR LESIONS\*

CORNEA A. OPACITY - Degree of Density - Area which is most dense is read	64ADI NG
Scattered or diffuse area, details of iris clearly visible Easily descernible translucent areas, details of iris slightly obscured Opelescent areas, no details of iris visible, size of pupil barely discernifulation of the company o	) le 3 2 2 3 1 .
8. AREA OF CORNEA INVOLVED One quarter or less but not zero Greater than one quarter but less than one half Greater than one half but less than three quarters Greater than three quarters, up to whole area	1 2 3
SCORE: A x B x 5 Total Maximum - 80	
IRIS A. VALUES Folds above normal, congestion, swelling, circumcorneal injection (any or all or a combination of any thereof), iris still reacting to light (sluggis Ro reaction to light, homorrhage, gross destruction (any or all of these)	l or these th reaction l
SCORE: A E 5 Total Maximum - 10	6
CONJUNCTIVA  A. REDNESS (refers to palpebral conjunctive only excluding cornea and iris Vessels definitely injected above normal Nore diffuse, deeper crimson red, individual vessels not easily discernible Diffuse beefy red	) 1 2
B. CHEMOSIS	3
Any swelling above normal (includes nictitating membrane) Obvious swelling with partial eversion of the lids Swelling with lids about half-closed Swelling with lids about half-closed to completely closed	2
G. DISCHARGE Any amount different from normal (does not include small amount observed in canthus of cormal amount)	4 inner
Discharge with moistening of the lids and hairs just adjacent to the lids Discharge with moistening of the lids and hairs and considerable area around	1
SCORE: (A + B + C) H 2 Total Maximum = 20	- <b>-</b>

\*Draize, John H. Dermal Tomicity. "Appraisal of the Safety of Chemicals in Foods, Drugs and Cosmetics".
ASSOCIATION OF FOOD AND DRUG OFFICIALS OF THE U.S., 1959, pp 49-51

RATING	rating of te	ST MATERIALS BASED ON EYE IRRITATION PROPERTIES*
Mon-irritating	0 - 0.5	DEFINITION  To maintain this rating all scores at the 24 hour reading must be zero; otherwise, increase rating 1 level.
Practically Mon-irritating	Greater than O.5 - 2.5	To maintain this rating, all scores at the 24 hour reading must be zero; otherwise, increase rating 1 level.
Minimally Irritating	Greater than 2.5 - 15.0	To maintain this rating, all scores at the 72 hour reading must be zero; otherwise, increase rating 1 level.
Mildly Irritating	Greater than 15.0 - 25.0	To maintain this rating, all scores at the 7 day reading must be zero, otherwise, increase rating 1 level.
Moderately arritating	Greater than 25.0 - 50.0	To maintain this rating, scores at 7 days must be less than or equal to 10 for 603 or more of the animals. Also, mean 7 day score must be less than or equal to 20. If 7 day mean score is less than or equal to 20 but less than 603 of the animals show scores less than 10, then no animal among those showing scores greater than 10 can exceed a score of 30 if rating is to be maintained; otherwise, increase rating 1 level.
Severely Irritating	Greater than 50.0 - 80.0	To maintain this rating, scores at 7 days must be less than or equal to 30 for 60% or more of the animals. Also, mean 7 day scores must be less than or equal to 40. If 7 day mean score is less than or equal to 40 but less than 60% of the animals show scores less than or equal to 30, then
Extremely Irritating	Greater than 80.0 -110.0	of 60 if rating is to be maintained; otherwise, increase rating 1 level.

eKay, J.M., Calandra, J.C., J. Soc. Cos. Chem., 13:281 - 289, 1962.

# SCALE OF SCORES FOR ULTRAVIOLET FLUORESCEIN SCAN

Reading Regative Positive with an ar	es one quarter or less	Grade
Positive with an ar	ea one quarter or less ea greater than one quarter but less than one half ea greater than one half but less than three quarters ea greater than three quarters, up to whole area	2 2 3

DISPERSE RED 60

C.I. 60756

CAS 17418-58-5

steinsburg and wentz roads post office box 203 spinnerstown, pennsylvania 18068

PRIMARY DERMAL IRRITATION IN RABBITS

215-536-4110

For: Toms River Chemical Corporation

Material received: 12/21/77
Test started: 1/10/78
Test ended: 1/13/78

Sample: Disperse Pink N Granules Description: Red powder Mix # 69 Project No. MB 77-2432

TR # 77-1012 Code No: 4080-40

This study is designed to determine the primary irritation index of a compound in rabbits.

Six New Zealand White albino rabbits weighing approximately 2.5 kg were housed individually in suspended wire mesh cages in a temperature controlled room. Purina Rabbit Chow and water were freely available. After at least seven days equilibration the back and sides of each rabbit were clipped free of fur with an electric clipper. Rabbits with dermal lesions or irritation were replaced. One day after clipping the left side of the spinal column was abraded (minor incisions which did not disturb the derma or produce bleeding). 0.5 g, if solid, or 0.5 ml, if liquid, of the test material was placed on an abraded site and an intact site of each back. The material was covered with dry surgical gauze, one inch square, two layers thick. The patches were secured with adhesive tape; the trunk was wrapped with impervious material. After 24 hours the patches were removed. The dermal reactions were scored by the Draize technique at 24 and 72 hours. The primary dermal index was calculated.

The individual results are attached. The primary dermal index was O.

CONCLUSION: Non-Irritant

Respectfully submitted,

Oscar M. Moreno, Ph.D. President
3/20/78



## INDIVIDUAL SCORES

Erythema & Eschar Formation	1	Rat 2	obit No 3	ımber 4	5	6	Mean Score
Intact skin - 24 hours Intact skin - 72 hours Abraded skin - 24 hours Abraded skin - 72 hours	0 0 0	0000	0000	0000	0000	0000	0000
Edema							
Intact skin - 24 hours Intact skin - 72 hours Abraded skin - 24 hours Abraded skin - 72 hours	0 0 0	0000	0000	0000	0000	0000	0000
	Sum of Mo	ean So	cores	5			0
Primary De	rmal Inde	ex = S	Sum of	Mean	Scor	es/4	O

Evaluation of Skin Reactions	Value
Erythema & Eschar Formation: No erythema	
Very slight erythema (barely perceptible) Well defined erythema	0 1
MODERATE to severe existence	2
Severe erythema (beet redness) to slight eschar format (injuries in depth)	3 ion 4
Edema Formation: No edema	**
Very slight edema (barely personal)	0
raising) area well defined by definite	Princes
Moderate edema (raised annual to a	2
Severe edema (raised approximately 1 millimeter) beyond the area of exposure)	3 ng
	4